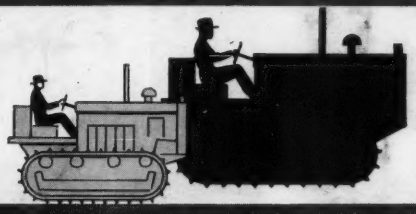
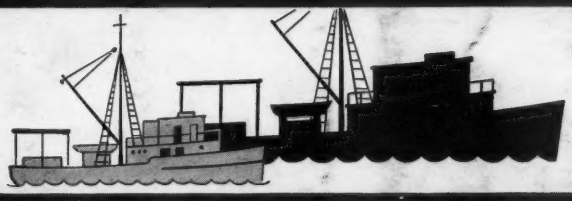
CALIFORNIA
OIL WORLD
and Petroleum Industry
JAN 20 1942

Longer Hauls— BETWEEN OVERHAULS

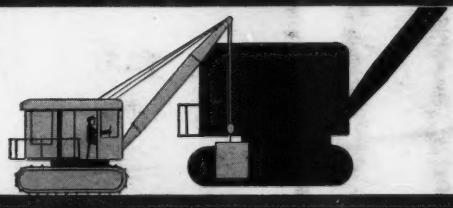


ENGINE LIFE DOUBLED

3 TIMES FARTHER BETWEEN PISTON INSPECTIONS



TWICE AS LONG BETWEEN OVERHAULS



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Vol. 35
No. 1
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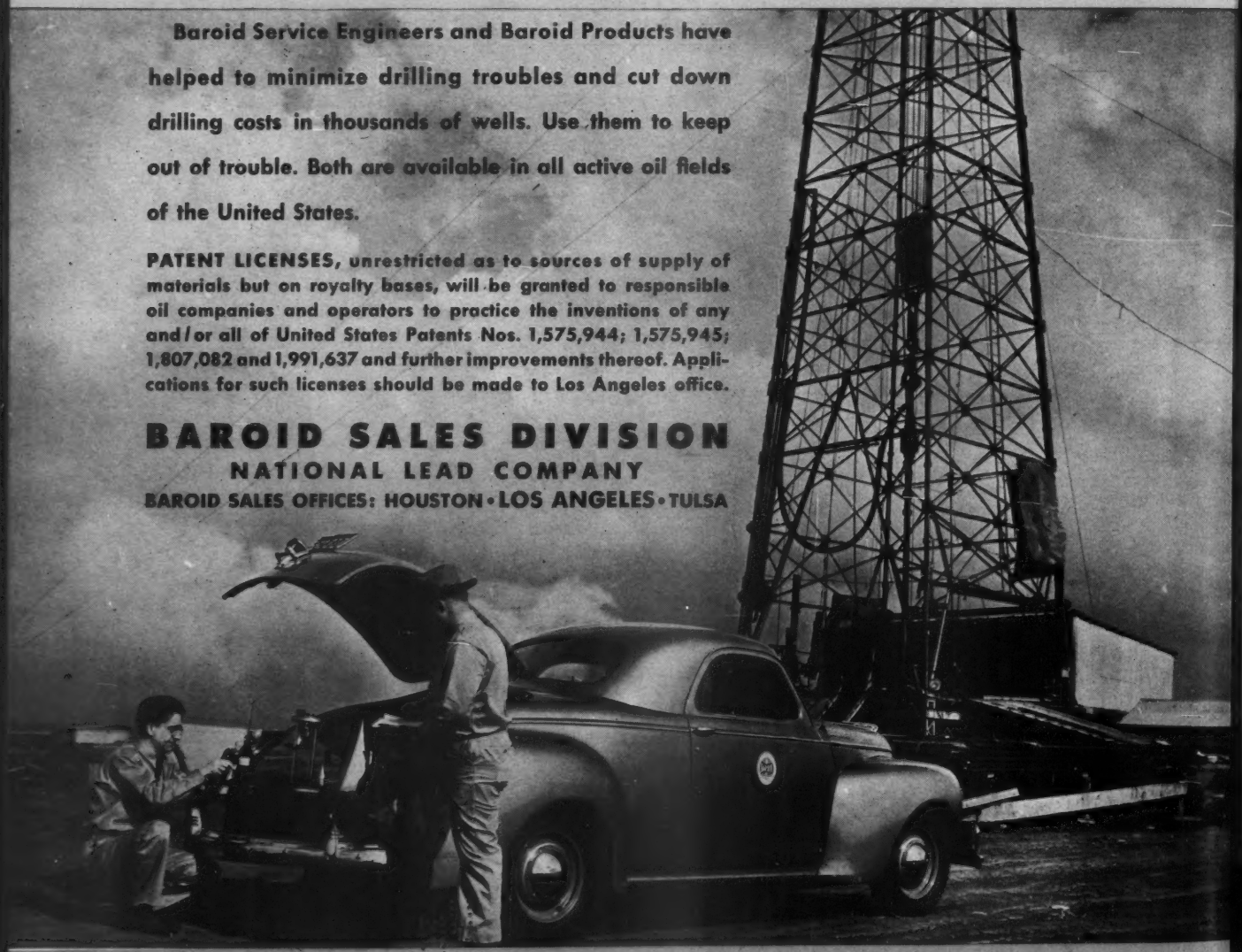

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NORTHERN CALIFORNIA

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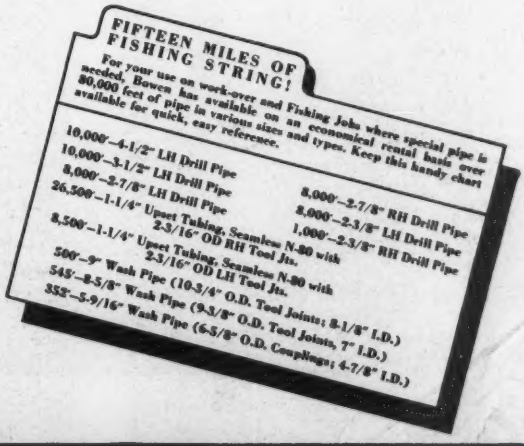
The Company branch located at Casper, Wyoming, is fully equipped to serve Rocky Mountain operators as it has in the past.

All Bowen Service Stores are open 24 hours a day for your convenience.

S. R. BOWEN CO. is retained as the firm name of the organization manufacturing Bowen Oil Well Tools for interstate and export sales. Rental tools for domestic use will be distributed through the new Bowen Fishing Tool Co.

S. R. BOWEN CO. is well equipped to handle all types of oil field repair work in its modern shop including—in addition to general machine work—pipe straightening and welding. Your inquiries concerning repair work or manufacturing are invited.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8,500'–1-1/4" Upset Tubing, Seamless N-80 with 2-3/16" OD LH Tool Jts.
500'–9" Wash Pipe (10-3/4" O.D. Tool Joints; 8-1/8" I.D.)
545'–8-5/8" Wash Pipe (9-3/8" O.D. Tool Joints, 7" I.D.)
353'–5-9/16" Wash Pipe (6-5/8" O.D. Couplings; 4-7/8" I.D.)
8,000'–2-7/8" RH Drill Pipe
8,000'–2-3/8" LH Drill Pipe
1,000'–2-3/8" RH Drill Pipe

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January 13, 1942

Telephone Number TUcker 2571

War Brings California Petroleum Industry

Three Major Problems

Three major problems faced the California petroleum industry at the outbreak of war in the Pacific. The first problem, that of storage and transportation of crude oil and products, is the most difficult of solution but steps are being taken in that direction and cooperative effort already in evidence indicates that some assistance in the matter of priorities will bring a rapid solution to this problem. The second problem, that of failure to convince Washington that California oil fields cannot be operated in accordance with rules applicable in the Mid-Continent or Texas Gulf Coast, as witness Conservation Order M-68, is probably nearer solution. William F. Huff, a Californian, has been named director of the division of materials in the Office of Petroleum Coordinator. This division was organized to speed up and localize the contact with OPM. The division will act directly or in an advisory capacity on all matters relating to oil materials. It will provide for preference ratings or allocations for the five divisions of the POC, marketing, refining, transportation, production, and foreign. Review of recommendations on PD-1 forms for all divisions will also be a function of the materials division, which is set up to keep abreast of all supplies available and to give advice on all industry needs. Relationships with oil industry supply houses will be another function. In its relationship with the OPM, the materials division is to keep posted on all priority orders and to serve as an "industrial branch".

The third problem concerned the evolution of a plan to supersede the voluntary conservation system which has been operative in California for the past 12 years. A new plan for production in California has been approved by Petroleum Coordinator Harold L. Ickes, but it is particularly stressed that this plan is subject to revisions, and numerous changes are already indicated.

Fundamental differences in the method of allocation of oil production to the individual fields, pools, and wells are inherent in the new plan, which is in effect for January. It is based on a determination of the maximum sustained production rate at which individual pools can produce under the engineering principles set forth in the plan. The former rate was based on the potential of wells, together with their depth, each well being curtailed from its potential in accordance with a formula uniformly applied to all wells. The new plan, which takes into consideration such factors as gas/oil ratios, formation pressures, and other engineering principles, gives no weight to potentials,

Some reassurance was given to California oil men recently when James M. Hughes, OPM's contact man with the Office of Petroleum Coordinator, said that Conservation Order M-68 was undergoing drastic revision. Meanwhile, California oil men were urged to apply for exceptions when they encountered points in the order inapplicable to California conditions. The industry is now waiting for P-98, which is scheduled to supplant P-100, and which will set up priority ratings for the oil industry.

Here is a recently developed plant for production of 100 octane aviation gasoline blending stock.

Biltmore Bowl was packed when the first plan for production was read.

and, except for minimums, no weight to depth. Neither does it set up an arbitrary maximum production rate for individual wells, which also was a feature of the former plan, and which limited the production of any well to 139 barrels per day in December.

The Chairman of the Production Committee for District Five, E. E. Pyles, told the members of the Conservation Committee that while the plan was now in effect, it was subject to modification if transportation difficulties or need for special kinds of oil made adjustments necessary. "This matter came upon us at the same time that war broke, that various priority orders came out, and during the holiday season. If it is rough in spots, we ask that the operators bear with us until the rough spots can be smoothed over, which we will do so as soon as we can," Mr. Pyles said.

L. L. Aubert, a member of the Production Committee, and chairman of its sub-committee, which worked out the original plan, pointed out that the allocation schedule for January would apply only to January, and that changes would be made for February as conditions demand.

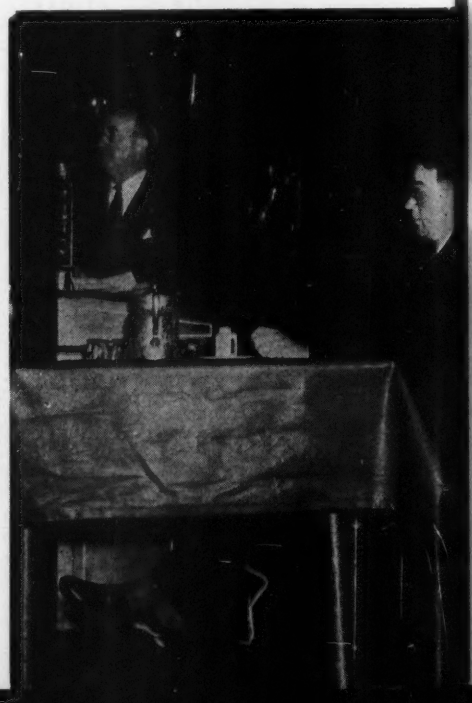
In that connection Mr. Pyles said that the production committee had taken note of the fact that crudes high in anti-knock gasoline content, and those high in fuel oil content, would probably be given the "green light" in February. He said, however, that no special consideration had been given to special kinds of crudes in the schedule set up for January, due to the lack of time and the necessity to put a production plan into operation.

Mr. Aubert, who outlined the plan itself, said that in arriving at actual field allocations, the committee had first arrived at a total sustained productive capacity of 913,755 barrels per day for the state, and then had arrived at an "effective sustained productive capacity" by eliminating all wells shut in since January 1, 1941. This figure, 878,109 barrels per day, was then used as the base from which to arrive at the allotted production, 646,200 barrels per day. "Reduction of the 878,109-barrel figure to 646,200 barrels per day was reached by consideration of depth minimums, gas/oil ratios, formation pressures, and other factors, all of which come within the terms of the production plan for the district," Mr. Aubert said. "Our use of these methods made us completely confident in submitting the present allocation schedules to the Coordinator's office in Washington, and that office has approved them," he said.

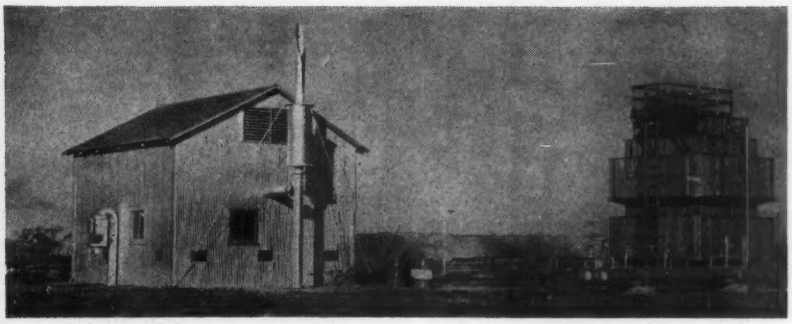
Use of the method resulted in the allocation of a total of 638,600 barrels per day, 5600 barrels less than the quota set by the Petroleum Coordinator. This amount of oil will be used for allocation to newly completed wells, according to Mr. Aubert.

California oil men are confident that the priorities situation which is currently unfavorable to Pacific Coast producers, refiners and transporters, will be remedied speedily. The priorities setup, it is pointed out, was predicted on an Atlantic war, and the situation has changed drastically in the three months since the formulation of the orders now in effect. War in the Pacific means that California must provide huge volumes of

Dana Hogan and A. C. Rubel spoke in the afternoon session.



Rush M. Blodget didn't miss a word.



Pilot plant for cycling gas in Paloma condensate field.

fuel oil for the navy, as well as millions of gallons of fighting grade aviation gasoline for the fliers. It is extremely fortunate that one who understands California petroleum problems, Ralph K. Davies, should have been appointed deputy Petroleum Coordinator. A more recent indication of the important part the Pacific Coast oil industry is expected to play in World War II is the selection of a Californian to direct the new materials division of the office of Petroleum Coordinator. William F. Huff, the new materials director, started his career in public utilities, with the Pacific Telephone and Telegraph Co., when the first World War came and he enlisted as a private. He served eighteen months, winning promotion to the rank of second lieutenant. After the war he served in various capacities in crude oil production work, and in 1921 he joined National Supply Co. In 1938 he went to Petroleum Equipment Co. as manager of tubular sales. His home is in Glendale, Calif.

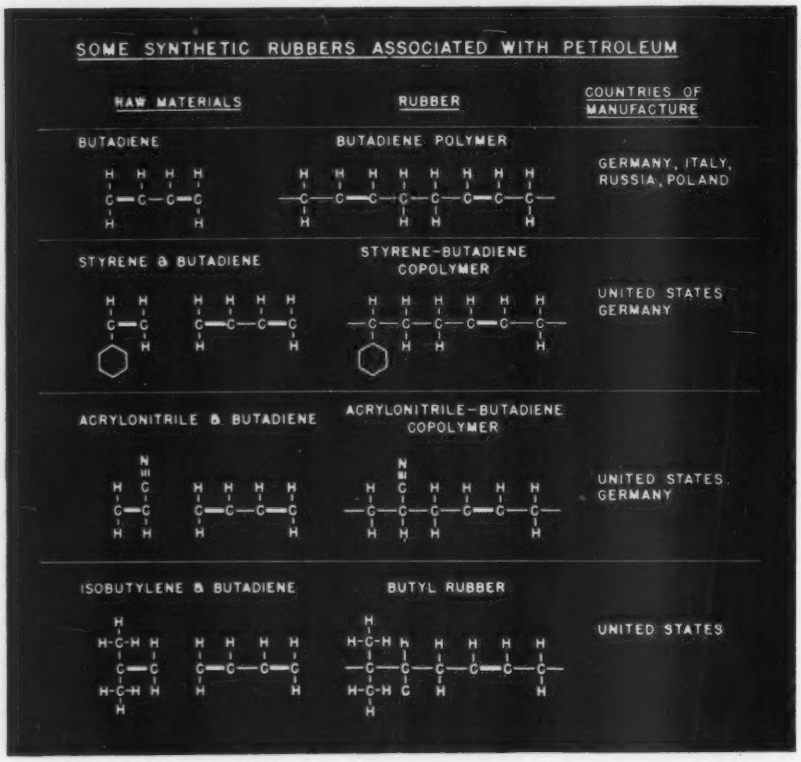
The materials division was established on the recommendations of Mr. Davies, who said: "The increasing importance and volume of work concerned with preference ratings and allocations of oil industry materials make it desirable to establish a specialized functional unit to aid this office in fulfilling its responsibility for assisting the petroleum industry to obtain essential materials.

"In performing this service for the industry, the materials division will also, in effect, serve the Office of Production Management as an 'industrial branch', specializing in the field of petroleum."

A major function of the new division, Coordinator Ickes said, will be the planning of the most effective use of material, equipment and supplies required by the oil industry, based on appraisals of necessity and urgency made by the OPC divisions of production, refining, transportation and marketing. This will involve encouragement of oil industry cooperating in effective utilization, curtailment and substitutions of material; advising of the industry regarding the information required and the procedures to be followed in applying for preference ratings and securing essential materials; and maintenance of current knowledge of the stocks of materials and equipment held by supply houses

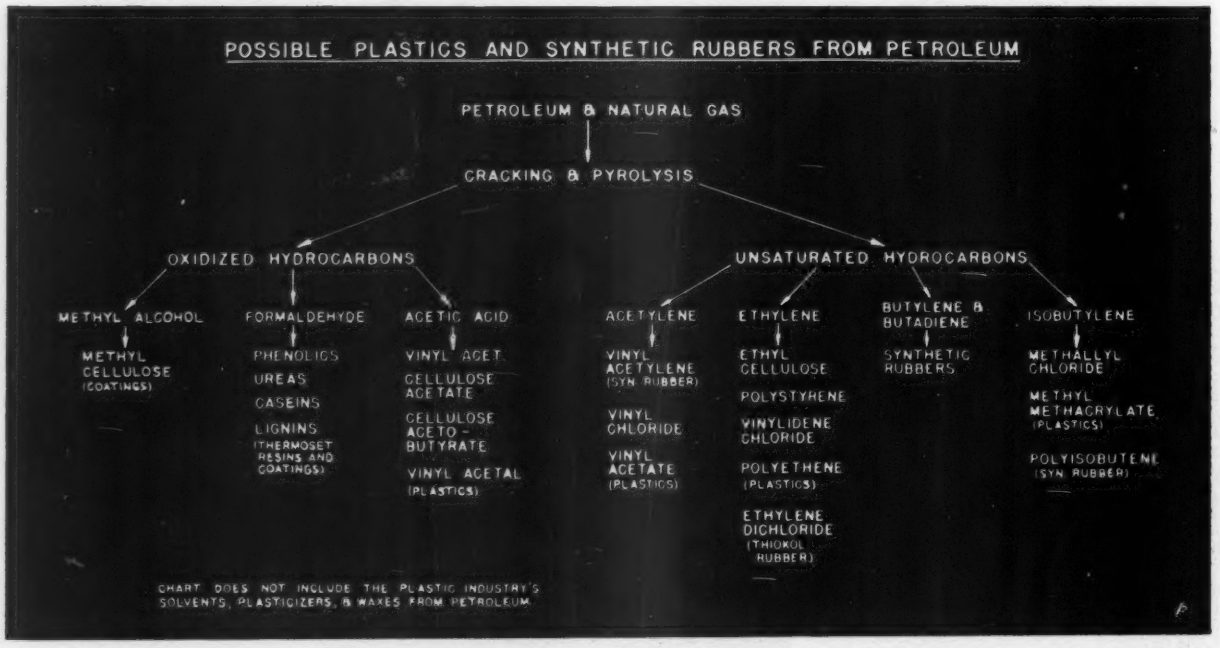
One of the California producers of 100 octane blending stock gives us a glimpse of the complexities of modern refining.

and oil companies and advise and assist in maximum utilization. The division will obtain preference ratings and allocations in appropriate relation to competitive demands, and expedite deliveries consistent with the ratings. It will administer, within the authority of OPC, all oil industry priority orders which are not directly related to operating projects; administer the review and recommendation on PD-1 requests, in consultation with the other OPC divisions; and handle routine control and followup of applications for certificates of necessity, in consultation with the other divisions. It will also develop information and statistics on the critical material requirements of all branches of the oil industry.



In calling recently for increased production from oil fields which yield the high grade crude oil needed for aviation gasoline, Petroleum Coordinator Ickes mentioned the Pacific Coast especially as a source of much of this type of crude oil. The Coordinator's recommendation said, in part:

> One close observer of the California petroleum industry believes that the federal government may soon require producers who have been transporting their output exclusively by tank truck to make connections with pipelines. The tank trucks would be used by the military to assure Army and Navy supplies of motor fuels, fuel oils and lubricants.



The above diagram, prepared by William C. Goggin, of Dow Chemical Co., is of particular interest following the announcement of Federal Loan Administrator Jesse Jones, with the approval of President Roosevelt, that the Reconstruction Finance Corp. is ready to finance $400,000,000 of plant construction for the manufacture of synthetic rubber. It will be noted that the petroleum industry can provide all the materials for the best types of synthetic rubbers, for instance, butadiene, styrene, acrylonitrile, and isobutylene.

Pictures on this page indicate the thoroughness of California refiners.

"It is essential, in the national interest, that supplies of all grades of aviation gasoline for military, defense, and essential civilian uses be increased immediately to the maximum.

"A vast program of expansion of the facilities for manufacturing aviation grades of gasoline has been undertaken jointly by various agencies of the Government, together with the oil industry.

"To assure the successful accomplishment of this program, it is necessary that there be ready and adequate supplies of aviation grade crude petroleum and aviation gasoline components from the natural gas and condensate and oil fields of each state to fill the demand of existing facilities and of additional facilities as they become available.

"It is, therefore, recommended that, within the quotas recommended each month for each state, that allowable production of fields and pools shall be so fixed as to:

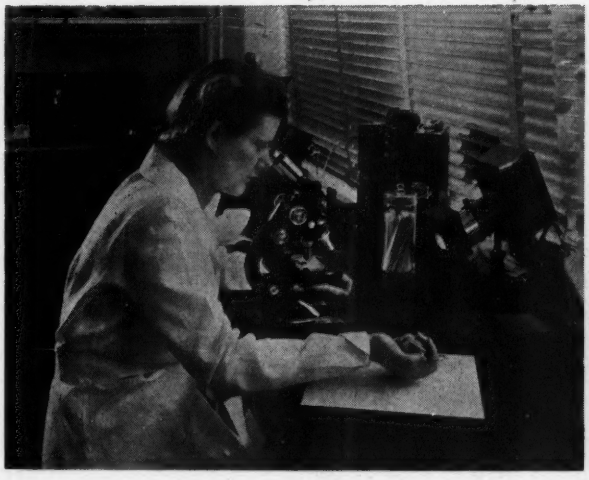
"(a) Provide aviation grade crude petroleum to the full extent that such petroleum can be utilized for the production of aviation gasoline to refineries that are actually utilizing their aviation gasoline refining facilities and their current supplies of aviation grade gasoline for military purposes.

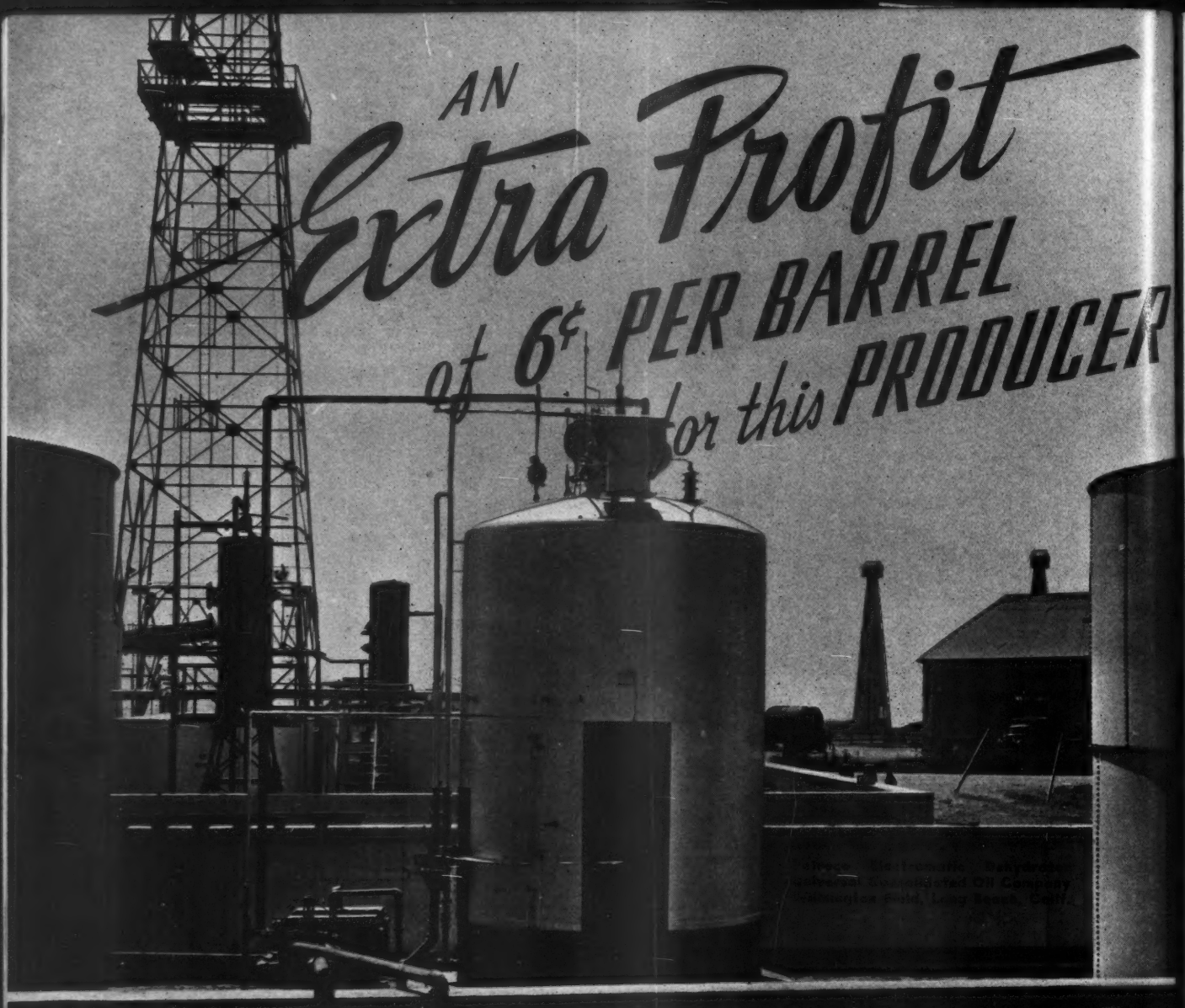
"(b) Provide increased allowables to the extent that the production can be utilized by additional aviation gasoline refinery capacity as it becomes available, to those fields capable of supplying such additional refinery capacity with aviation grade crude petroleum.

"(c) Encourage the efficient recovery of additional quantities of aviation grade gasoline components from natural gas condensate and oil fields of each state."

This new recommendation is the latest step in a comprehensive program launched last summer by the Office of Petroleum Coordinator, to make ample supplies of aviation gasoline available when and where needed. These steps have included the launching of a huge program of refinery construction and expansion, issuing orders restricting the use of aviation gasoline components to essential purposes, expediting of priority applications for aviation gasoline plants, obtaining agreement by patent owners to slash royalties on aviation gasoline processes, and mobilizing of the industry's leadership in the Petroleum Industry Council for National Defense.

Provision has been made, with the





AN Extra Profit of 6¢ PER BARREL for this PRODUCER

To obtain a maximum profit, all production knowledge must be skillfully utilized. If dehydration is one of your production problems . . . *PETRECO can help you get that EXTRA PROFIT.*

Shown above is a Petreco Dehydrator, and *it is getting that extra profit.* Before its installation the "shipping" cut averaged around 2% B. S. & W. and the "shipping" gravity averaged 23.9 degrees A.P.I. With the installation of the Petreco Process, the oil flow system was made vapor tight and a moderate back pressure was held from the wells through the dehydrator to the shipping tanks. Efficient cooling of the electrically dehydrated oil before it entered the shipping tanks was obtained by using harbor water in water to oil exchanger equipment. This skillful use of production knowledge has resulted in "shipping" cuts below .5% B. S. & W. and "shipping" gravities above 24 degrees A.P.I. Based on these figures the following saving has been estimated:

Saving in gravity	4.¢ per bbl.
Saving in volume	2.¢ per bbl.
Total Saving	6.¢ per bbl.

These figures represent actual Petreco performance. A discussion of your dehydration problems with a Petreco engineer entails no obligation, and may result in *extra profit.*

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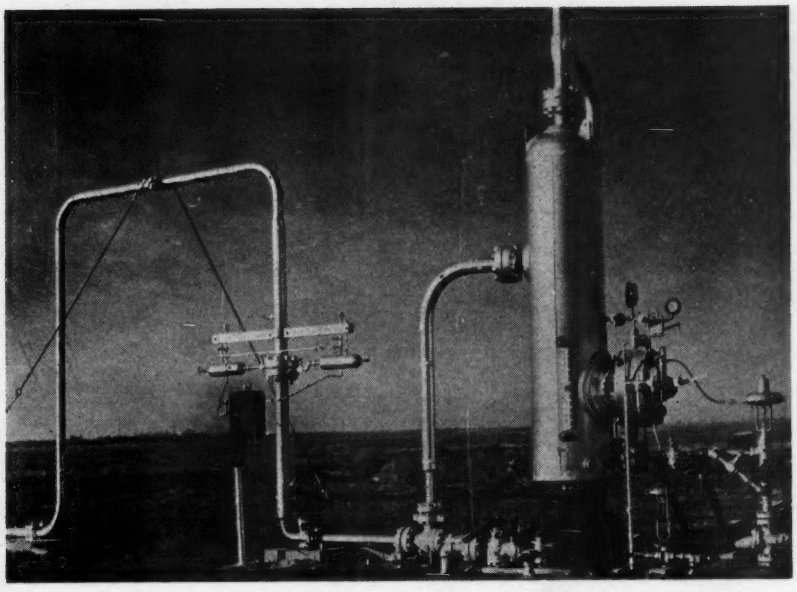


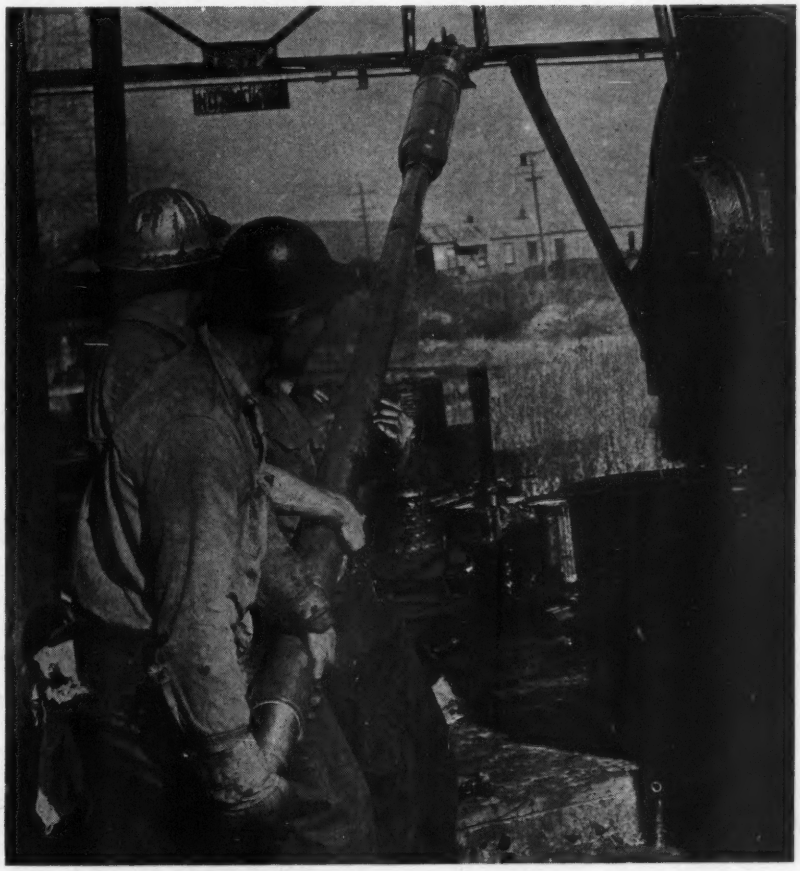
High pressure separator system in Paloma condensate field.

approval of the Department of Justice, for authority for the oil companies, pursuant to the direction of the Petroleum Coordinator, to engage in pooling operations in order to expedite the production boosting program. That is to say, the anti-trust laws will not stand in the way of whatever steps the Petroleum Coordinator finds necessary to insure an increasing supply of aviation grade gasoline. Pursuant to the direction of the Petroleum Coordinator, the authorization for pooling operations permits companies to combine their production, transportation and refining facilities; and to sell, lend or exchange among one another their stocks of crude oil, gasoline and blending agents, and their patents and processes "whenever and to whatever extent may be necessary to facilitate the maximum production of all grades of aviation gasoline or to reduce the time required to produce such gasoline."

The Coordinator's Office pledges its assistance in obtaining price adjustments whenever costs of the expansion program shall so warrant.

A tentative program of refinery construction designed to expand the capacity to produce 100 octane gasoline to 150,000 barrels daily by July 1, 1943, has been mapped out. Large installations are favored because of the saving in metal for unit output. The government has asked all refiners of average or larger size to submit proposals on construction program with the understanding that the government will finance all or most of such projects. The government would agree to buy the output of the aviation grade gasoline plant at a calculated price which would liquidate the plant cost in a period of three years. With 23 1/3 per cent given as a typical factor of obsolescence and 10 per cent against depreciation, the only costs to be defrayed out of the calculated price paid by the government are those entailed in operating expenses.

Contracts for this construction are available in three forms. 1. Plants to be fully financed by the government and to operate for the duration of the war only. 2. Plants to be partly financed by the government through loan, and, 3. Plants to be financed entirely by oil companies. The contracts are expected to contain an agreement by the De-



To conserve vital war material, this new type pump, which eliminates need for tubing, was developed. It is in use in California.

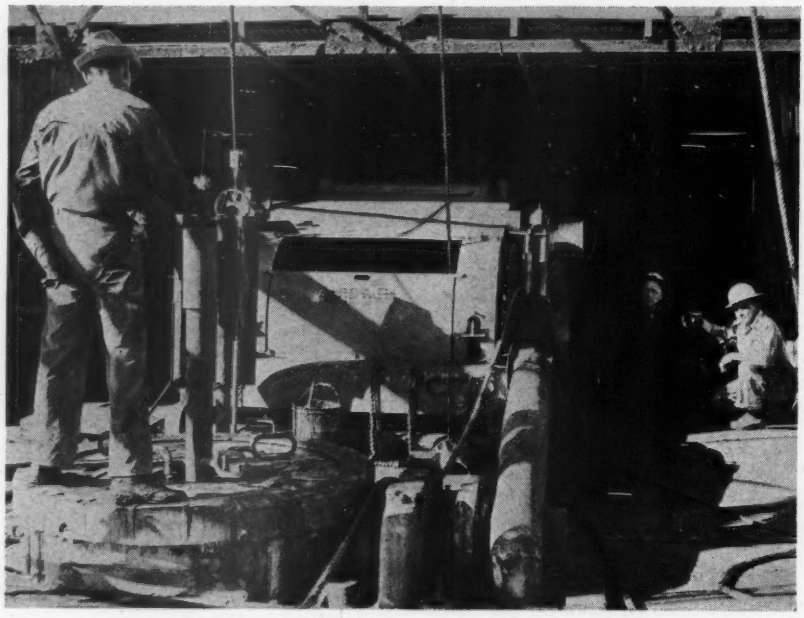
Driller at the Arvin electric rig has plenty of instruments to watch.

fense Supplies Corp., a Reconstruction Finance Corp., subsidiary, to buy the entire output of the plants for three years, with options to Defense Supply Corp. for two one-year renewals.

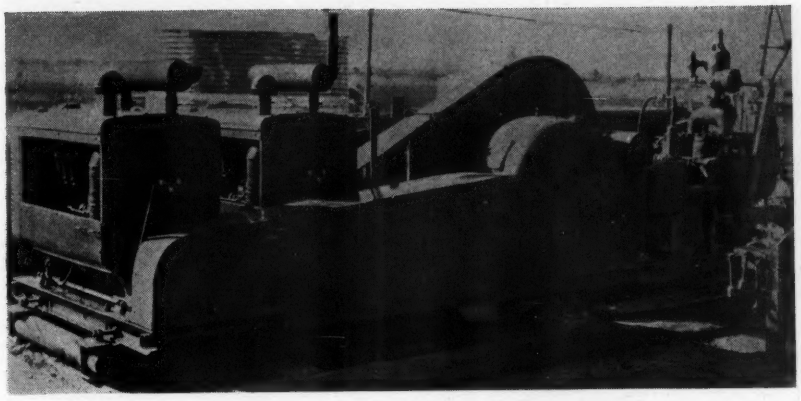
The Defense Plant Corp., another RFC subsidiary, has been set up to finance the building of plants completely financed by the government. Refiners who plan to make aviation grade gasoline for the duration of the war only would rent the plant facilities from the Defense Plant Corp. Already applied in the case of Cities Service Oil Co. is the second form of contract, known as the "escrow plan," under which the refiner borrows 75 per cent of the plant cost. In this case the 10 per cent annual depreciation sum is retained by Defense Supplies Corp. and credited to the account of the refiner for application against the loan. At the end of three years a sum equal to 30 per cent of the plant cost would be credited to the refiner. The 23 1/3 per cent obsolescence credit sums are placed in escrow with the Reconstruction Finance Corp., and at the end of three years this totals a sum equal to 70 per cent of the original cost of the plant.

If, at the end of three years, the war is over, the refiner may, under the escrow plan, deed the plant facilities to the government and claim all of the amortization reserves which had been set up in escrow, from which he may pay the balance of the loan from the government. If the refiner wishes to keep the plant he forfeits all interest in the amortization reserve and pays off the balance of the loan from his own funds.

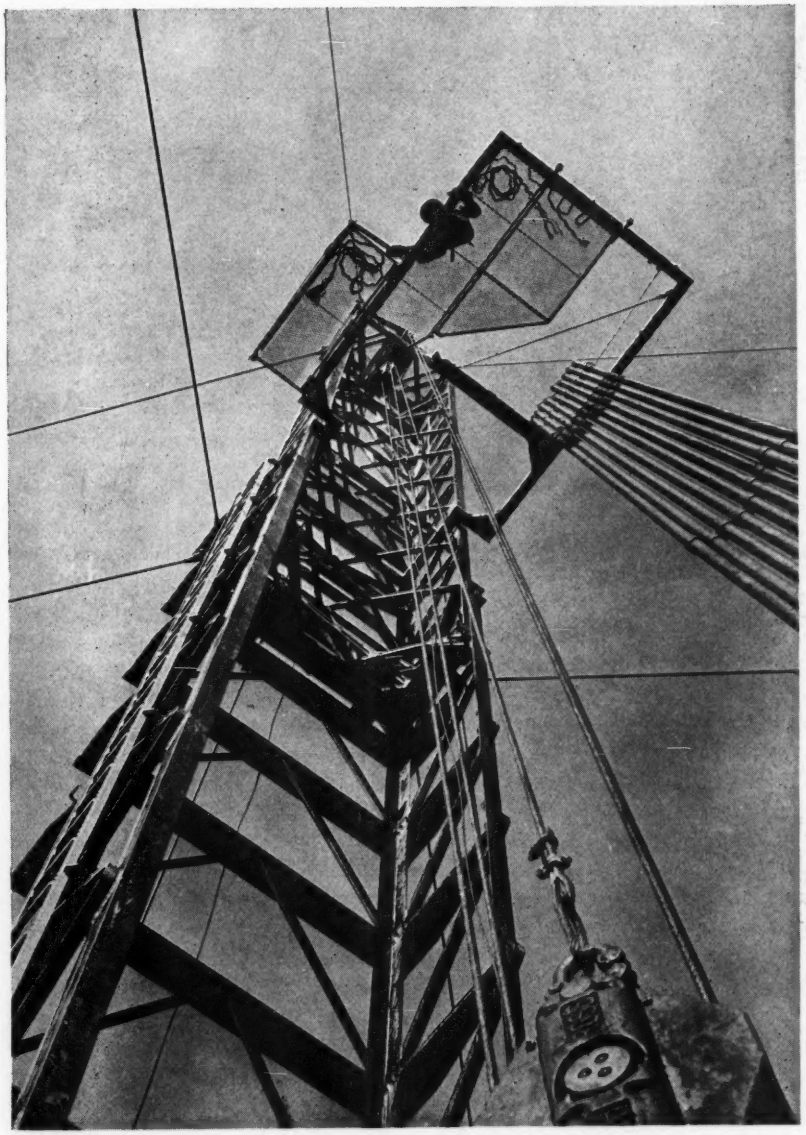
One of the most important steps taken by the Office of Petroleum Coordinator was that of ordering the pooling of all necessary patent licenses for sulphuric acid alkylation and the offering of the process to all refiners under such terms and conditions as will facilitate the participation of such refiners in the expanded 100 octane aviation gasoline program. The Petroleum Coordinator recommended that Texaco Development Corp., Shell Development Co., Standard Oil Development Co., Anglo-Iranian Oil Co., Ltd., of England, Universal Oil Products Co., and affiliates of these companies, "shall immediately negotiate with each other and with competent engineering and contracting firms to standardize as far as is possible the design of and operating technical data with respect to sulphuric acid alkylation plants, and to make available to the petroleum refining industry, directly or through agents



Running a Sperry-Sun survey in the J. Paul Getty well at Edison.



Interesting is E. A. Bender's mudpump hookup.



The portable drilling and servicing rig made considerable headway in 1941.

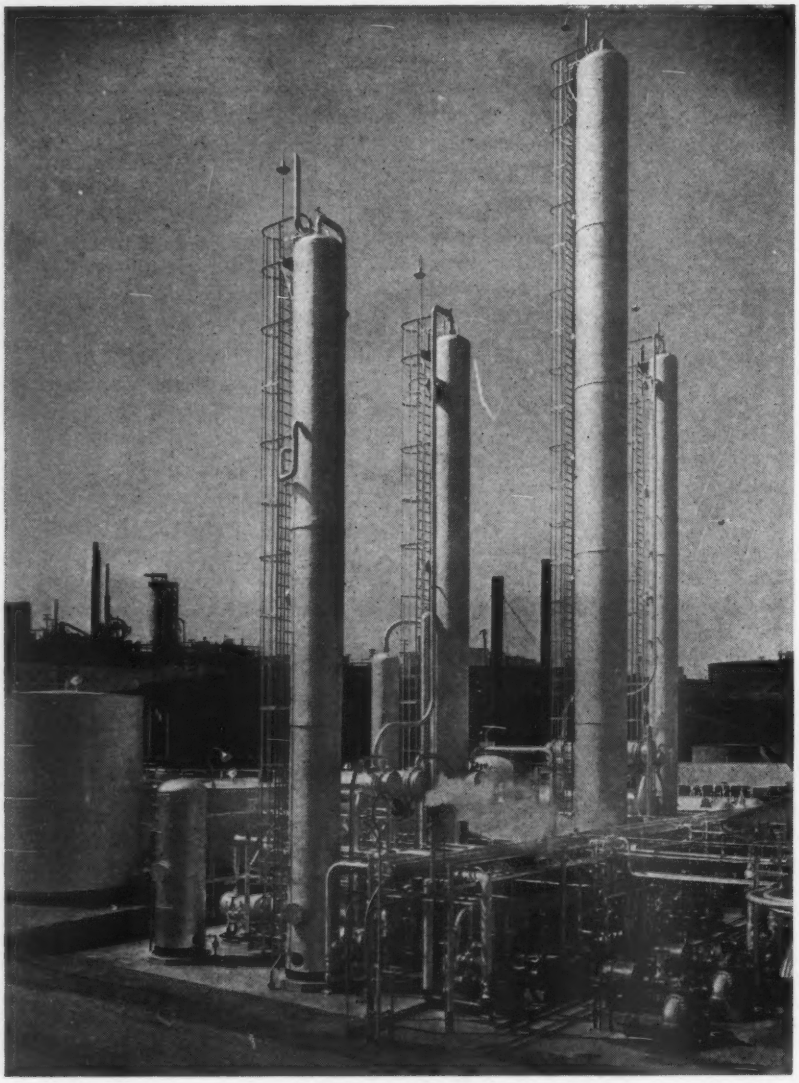
and engineering contractors, such standardized design and operating and technical data so as to permit any petroleum refiner to make or have made prompt and reliable engineering estimates, and obtain technical assistance and data with respect to all matters relating to the cost and operation of sulphuric acid alkylation plants or units best suited to such refiner's needs."

The companies named "shall unite in offering to petroleum refiners new licenses covering the use of the sulphuric acid alkylation process under the patent rights owned by such companies on the process, the terms and conditions of such licenses first to be approved by the Chief Counsel of the Office of Petroleum Coordinator for National Defense, and such licenses shall contain the following terms, among others:

"(a) On the normal or unrestricted commercial production of 'alkylate' by the refiner-licensee, the royalty to be collected from said refiner-licensee shall be reduced from the present rate of 42 cents per barrel of 'alkylate' produced to a rate not in excess of 30 cents per barrel of 'alkylate' produced;

"(b) On 'alkylate' produced and sold by the refiner-licensee either to the armed forces of the United States or upon the direct or indirect request or order of the United States or any agency thereof for the use of the armed forces of the United States or any foreign country, the royalty to be collected from said refiner-licensee shall be reduced from the present rate of 42 cents per barrel to a rate not in excess of 21 cents per barrel of 'alkylate' so produced and sold during the period commencing with the date of issuance of this Recommendation and ending July 1, 1943, and not in excess of 15 cents per barrel of 'alkylate' so produced and sold from and after July 2, 1943;

"(c) All technical data, information, improvements, and technical assistance required or appropriate for the construction and operation of plants for the practice of the sulphuric acid alkylation process shall



California alkylate production plant.

be made available readily and continuously to licensees."

The fighting grade aviation motor fuel desired by the government has the following specifications: Color, blue; octane number, 100 (by a modification of the A.S.T.M. Method D-257-40); sulphur, maximum, 0.05 per cent; corrosion and residue (copper dish) 5 mg. maximum residue and no discoloration; gum, modified government method, 6 mg.; tetraethyl lead, maximum, 4 ml.; vapor pressure, Reid, maximum, 7 pounds; freezing point, maximum, minus 76° F.; inhibitor, maximum for 5000 gallons, 1 pound. The A.S.T.M. distillation: 10 percent, maximum, 167° F.; 50 per cent, maximum, 212° F.; 90 per cent, maximum, 275° F.; residue, maximum, 1.5 per cent; loss, maximum, 1.5 per cent.

Materials upon which the refiner must draw to make gasoline of these specifications includes isobutane, isobutylene, butane, butylene, isopentane, and the materials from the alkylation, catalytic cracking, hydroforming, polyforming, and hydrocodimer plants, plus additions of tetraethyl lead and possibly benzol.

Five out of thirteen plants for which the Petroleum Coordinator has secured high priority ratings are located in California. These are: Standard Oil Co. of California, a special cracking unit; Union Oil Co., an isopentane plant at one refinery, and a special cracking unit at another; Shell Oil Co., Inc., an isopentane plant; Shell Development Co., a pilot plant. Standard Oil Co., and Tide Water Associated Oil Co., are already building aviation gasoline plants.

While most of the emphasis to date has been on the fighting grade aviation gasoline requirement, it is quite likely that California producers and refiners will soon be asked to expend much, if not most, of their effort in providing fuel oils for the war effort. It is pointed out that while it may be economical to ship aviation gasoline to the Pacific Coast from the Mid-Continent, such would not be the case in the matter of fuel oils. The petroleum industry has been given a tremendous assignment by the Petroleum Coordinator, and California has moved speedily to take up its part in the program. The assignment, as announced by the Petroleum Coordinator, is as follows:

1. Produce at least 1,500,000,000 barrels of crude oil during 1942, if that quantity can be supplied without impairing the ability to sustain the necessary production during the emergency.

2. Drill a sufficient number of wells, efficiently spaced, to furnish that amount of oil next year (1942) and to prove up sufficient reserves to furnish at least that amount during the following year.

3. Operate all wells so as to conserve reservoir pressure to the end that the greatest practicable ultimate recovery will be attained at the lowest possible cost, with minimum expenditures required to provide artificial energy to effect production.

4. Conduct an exploration campaign which will result in the discovery of new supplies adequate to maintain a comfortable ratio between reserves and current annual consumption.

5. Maintain surface stocks of crude oil at adequate levels with respect to refinery requirements for

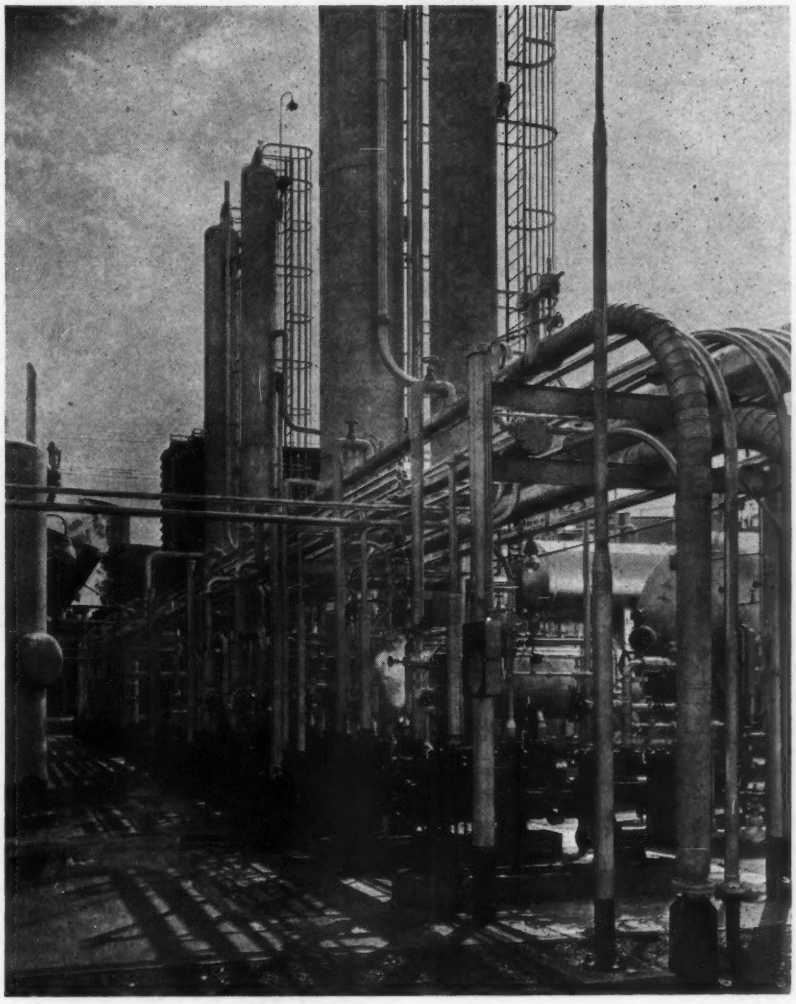
the various grades and qualities of products as well as stocks of the products sufficient to protect against any unusual demand that may arise.

6. Make the most efficient use possible of the limited supplies of material and equipment to meet the demand upon all branches of the industry, finding, producing, refining, transporting and marketing.

The number of Californians in the Petroleum Industry Council for National Defense, and particularly in the Executive Committee, is significant of the important role designed for the California petroleum industry. W. R. Boyd, president of the American Petroleum Institute, is chairman of the Council and its Executive Committee, with Lawrence Vander Leck, president of Oil Producers Agency of California; A. L. Weil, chairman of the General Committee for District No. 5; E. E. Pyles, chairman of the Production Committee for the district; H. D. Collier, president of Standard Oil Co. of California, and William F. Humphrey, president of Tide Water Associated Oil Co., the California oil men on the committee. Other Californians on the full council are: C. S. Beesemyer; Sidney Belither, B. E. Devere, Dana Hogan, C. S. Jones, R. L. Lloyd, A. C. Mattei, S. B. Mosher, W. L. Stewart, and Reese H. Taylor.

The purpose of the council, according to Petroleum Coordinator Ickes, is to mobilize most effectively the resources and abilities of the petroleum industry to deal with the emergency conditions under which the industry must operate and to provide a competent, responsible and representative body equipped and authorized both to advise the Petroleum Coordinator for National Defense with respect to the petroleum industry and to carry into effect immediately measures affecting that industry recommended by the Petroleum Coordinator as essential to the national defense.

E. DeGolyer, speaking before the National Petroleum Association at Cleveland recently, quoted President Coolidge's letter constituting the Federal Oil Conservation Board in 1924, when he wrote with prophetic vision that "developing aircrafts indicate that our national defense must be supplemented, if not dominated by aviation. It is even probable that the supremacy of nations may be determined by the possession of available petroleum and its products."



Closeup view of California alkylation unit.

Mr. DeGolyer's review of the American Petroleum Industry during the first World War proves highly significant:

"About 10 days before the United States declared war in April, 1917, a voluntary organization, the National Petroleum War Service Committee, was formed by leading company executives of the American Petroleum Industry.

"In June, 1917, the Allied forces were extremely low on oil. Stocks were about half of what were regarded as the normal minimum. The British fleet had been partly demobilized and destroyers on patrol had been instructed to restrict operating speed to 18 knots in order to conserve fuel. Stocks of fuel for trucks, tanks, and planes in France and Belgium were so low that operating schedules had to be curtailed and it was possible that, in event of a German drive, the Allied armies might not have had enough fuel even to retreat with their equipment.

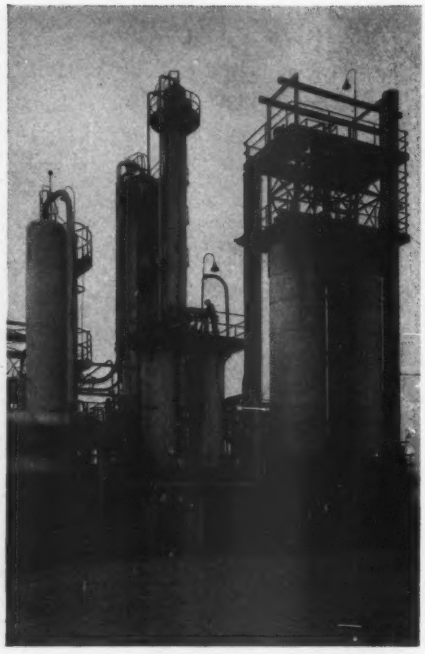
"The first need was for ships. The Allies were lacking even in ships with which to transport oil to France. Within a short time, every

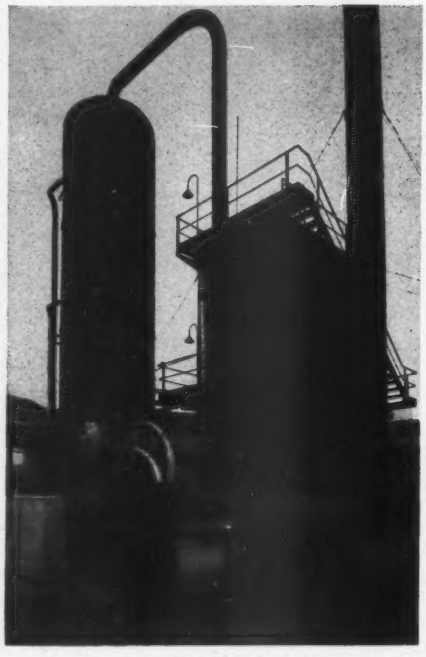
ship with double bottoms and ballast tanks loading at any port from Galveston to Montreal, except for ships with full cargoes of food and munitions, was loading out oil and within three months more than one million barrels of oil had been moved by such methods in lots of 350 barrels to 30,000 barrels. A commission of oil men was formed in England. It took over the operating control of tank ships and other oil cargo vessels. Accepting the doctrine of 'supply from the nearest source,' it rearranged Allied tank ship movements around the world. It arranged with the American committee to deliver fuel oil to seaports. Shipments were moved by tank car over distances as great as from Oklahoma to Montreal and from Wyoming to Philadelphia. Within a short time, depleted stocks were replenished, military and naval operations went forward on a normal scale, and submarine losses were checked.

"The committee pooled for overseas shipment the entire requirements of the United States and Allied forces. It obtained the services of tank ships from oil companies at one-third the going charter rates. The Food and Fuel Act, the so-called Lever Act, was passed on Aug. 10, 1917. The President fixed prices for bituminous coal on Aug. 21, 1917, and two days later the United States Fuel Administration was established by executive order with Harry A. Garfield as Fuel Administrator. Mark L. Requa was appointed general director of the Oil Division, Jan. 10, 1918.

"The Oil Division had broad powers of control but these 'were never called fully into action owing to the successful development of a plan of cooperation between the oil industry and the Fuel Administration whereby the oil industry, acting through the National Petroleum War Service Committee, became self-governing in terms of the national emergency.' After some negotiation, the Oil Division and the industry entered into 'The Plan' which was intended to stabilize prices and maintain an uninterrupted and adequate flow of crude and which included implied voluntary agreements restricting prices for refined products. 'The Plan' became effective upon its approval Aug. 9, 1918, and operated until Dec. 12, 1918, one month after the termination of the war."

California natural gasoline producers are going to have a large share in the job of keeping the Allied fighting forces supplied with aviation gasoline. Millions of dollars are ready to be spent on California plants handling the desired fractions of natural gasoline, it is reported.





Special cracking units at California refineries, for production of 100 octane motor fuel stock.

Late in 1917 Secretary of the Navy Daniels estimated the Navy's fuel oil requirements for the year at 3 million barrels, while the Oil Administrator estimated the gasoline consumption of an airplane at an average of 30 gallons daily. Compare this with the estimate of 1941 when the United States Navy was expected to use 36,000,000 barrels of Diesel and fuel oil, while the Army might require 28,000,000 barrels of motor fuel and lubricants. T. F. Wright, director and engineer of the Curtiss-Wright Corp., estimates consumption of fuel by a bomber at 90 to 150 gallons per hour, and that of pursuit planes at 100 to 116 gallons per hour.

In addition to its role as supplier of petroleum products for running and lubricating the American war machine, the petroleum industry is being called upon to supply synthetic products ranging all the way from rubber to toluene of nitration grade, California refiners are turning out products as varied as ammonia, hydrogen, alcohols, ketones, esters, ethers, and sulphuric acid.

Junior A. I. M. E. Installs Officers

With Jim Carriel taking over as new chairman, Al F. Woodward as vice chairman and John Stick as secretary, new officers were installed at the Jan. 8th meeting of the Junior Section of A.I.M.E., Los Angeles Chapter. Speakers for the evening were Everett G. Trostel and Clyde Thomas of the Petroleum Coordinator's office, who explained certain phases of the present blanket orders controlling oil development.

Officers of the Los Angeles Basin Chapter of the American Petroleum Institute for 1942 have been announced as follows: Chairman, W. E. Larson, The Texas Co.; vice-chairman, M. G. Edwards, Shell Oil Co., Inc.; secretary-treasurer, Tom Murphy, Martin-Decker Corp.; assistant secretary-treasurer, E. M. Boggess, Baker Oil Tools, Inc.

1941 Was an Important Year of Discovery

In all California Areas

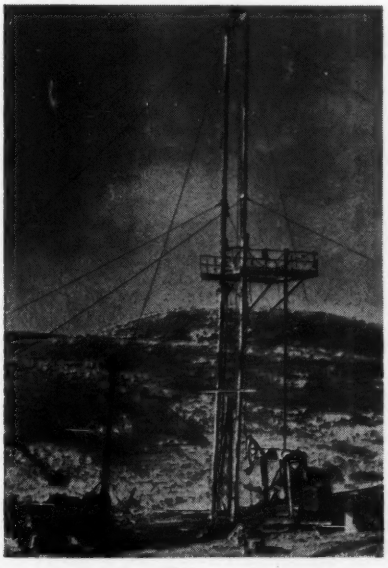
One year ago California Oil World carried the following statement: "With 1940 written into the record as a year of development with but few events of importance, the stage was set for a new era of discovery, and already many signs point to 1941 as an outstanding year in the annals of California oil exploration."

This prediction was fulfilled by the discovery of 12 new fields, the finding of an important deep zone in the old Inglewood field and the westerly extension of the Del Valle field. Geographically, these new finds are grouped four in Los Angeles county, six in Kern county and four in Fresno county. Production of each is definitely on a commercial scale but indications are that none will become a major factor in the State overall production picture.

Honors for new discoveries were shared by major companies and independent operators alike, three of the former were, however, fortunate enough to find two fields apiece. Geophysics was directly responsible for the locating of four new productive areas in the San Joaquin Valley, engineering and geological work are credited with the other ten.

Los Angeles County

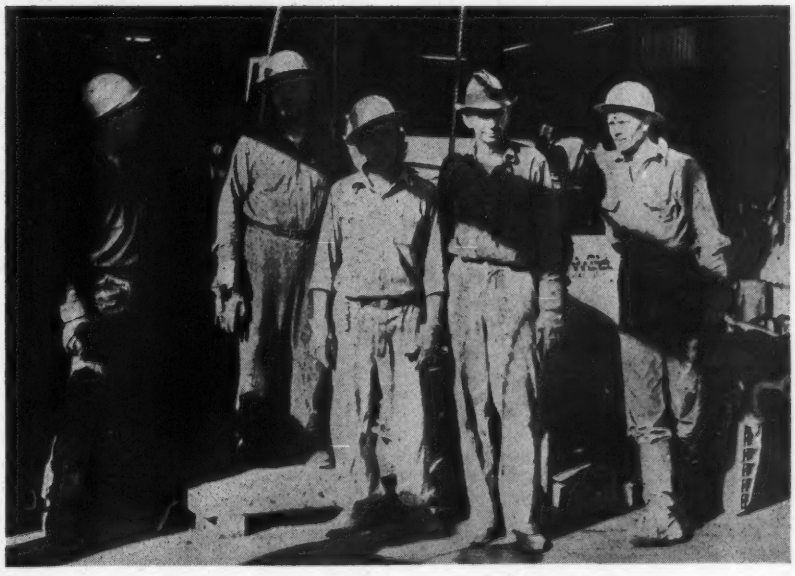
At the start of the year 1941, Western Gulf Oil Co. had drilled Lechler No. 1, a wildcat in sec. 31, 5n-17w near Castaic, to 2442 ft. and was preparing to test the interval 2296-2415 ft. After several attempts to completely shut off water, the well was completed February 1st pumping 50 bbls. of 22.5 gravity oil cutting 20% mud, emulsion and sand to open the Oak Canyon field. Immediately, Hathaway Co. drilled to the south completing Ram No. 1 at 2594 ft. pumping a small amount of wet oil. Moving to the north and east in the same section, Western Gulf Oil Co. drilled a second well on the Lechler property finding no shallow oil sand. The hole was then carried to 6089 ft. without showings and drilling was suspended a few days while company officials pondered the advisability of going farther. As the bottom appeared to be still com-



The successful Bradford-Bishop wildcat at Mount Poso was put down with a drilling mast.

1941 RESUME OF WILDCAT DRILLING IN CALIFORNIA
By 14 Leading Operators

Company	Carry Over Wells Started in 1940	Sub Total	Wells Started and Finished in 1941	Sub Total	Wells Started in 1941 and Carrying Over to 1942	Sub Total	Total 1941 Footage	Discoveries
Amerada Petroleum Corp..			4	32,627′			32,627′	2
Barnsdall Oil Corp.....			2	12,485′	1	5,944′	18,429′	
Continental Oil Co.....			3	22,486′			22,486′	2
General Petroleum Corp...			1	9,400′	1	13,291′	22,691′	
Ohio Oil Co.....			1	10,595′			10,595′	
Richfield Oil Corp.....	3	2,233′	5	28,569′			30,802′	
Shell Oil Co.....			8	23,707′	2	9,013′	32,720′	2
Standard Oil Co.....			3	14,323′			14,323′	
Superior Oil Co.....			1	14,123′			14,123′	
The Texas Co.....	1	1,640′	9	54,653′	2	15,615′	71,908′	
Tide Water Assoc. Oil Co..			4	19,161′	1	8,315′	27,476′	
Union Oil Company.....			1	12,396′			12,396′	
Western Gulf Oil Co.....	1	934′	2	14,274′			15,208′	1
Wilshire Oil Co..... (Including Wilshire Annex and Bandini Pet.)			3	21,611′			21,611′	1



Taking five at the J. Paul Getty well at Edison were, left to right: U. G. Loftis, J. G. Carter, R. E. Fife, D. Moseley, and C. W. Craven.

Type C Otis Removable Tubing Safety Valve for wells having either surging or steady flow

TYPE C SAFETY VALVE

A sure safeguard against wells flowing wild through tubing in case of attack or accident.
The Otis **Type C** Safety Valve is actuated by **Pressure Differential** and provides a positive and automatic Sub-Surface shut-off the instant damage, that would ordinarily turn the well loose through the tubing, is done to surface connections.

NOT AFFECTED BY HEADING AND SURGING FLOWS

The operating principle of the Type C Safety Valve makes possible a positive and automatic action that is not affected by surging flow. The pressure drop caused by severe surging is negligible so far as operation of the valve is concerned . . . the operation is by pressure differential alone, closing is affected only when the capacity of the surface choke exceeds that of the safety valve.

DESCRIPTION AND OPERATION

The Valve Assembly consists of an orifice section, a spring loaded main valve, and an equalizing or by-pass valve. The main valve is above the orifice section and is held open by the compression of a coiled spring. Chevron Packing prevents flow between valve stem and orifice section; consequently, all flow through the tool is limited to the openings in the orifice section. Any pressure drop across the orifice section acts against the area of the valve stem, tending to compress the coil spring and to close the main valve.

TYPE C SAFETY VALVE Data and Dimensions

Size	2"	2½"
Max. O.D. of Valve Cage Assem.	1⅞	1⅞
Length of Valve Cage Assem. only	19⅝	19¾
Length of Complete Assem. only	34⅛	35¼
Wt. of Valve Cage Assem. only	10 lb.	10 lb.
Weight of Complete Assembly	17½ lb.	22 lb.
Bore of Valve Assembly	17/32	17/32
Size of Spring	3/16 × 31/32 P.D.	3/16 × 31/32 P.D.

Prices of Complete Assembly or any part given on application. Complete stocks of parts carried in Dallas, Houston, and Los Angeles

If surface chokes or tubing connections cut out or become damaged **from any cause,** so that their capacity approaches that of the combined openings through the orifice section, a pressure differential is set up across the valve stem, causing it to close instantly and shut off all flow through the tubing.

REGULATION—With well pressure a known factor, the rate of flow that will close the Safety Valve is predetermined and regulated by the amount of compression placed in the coil spring before installation.

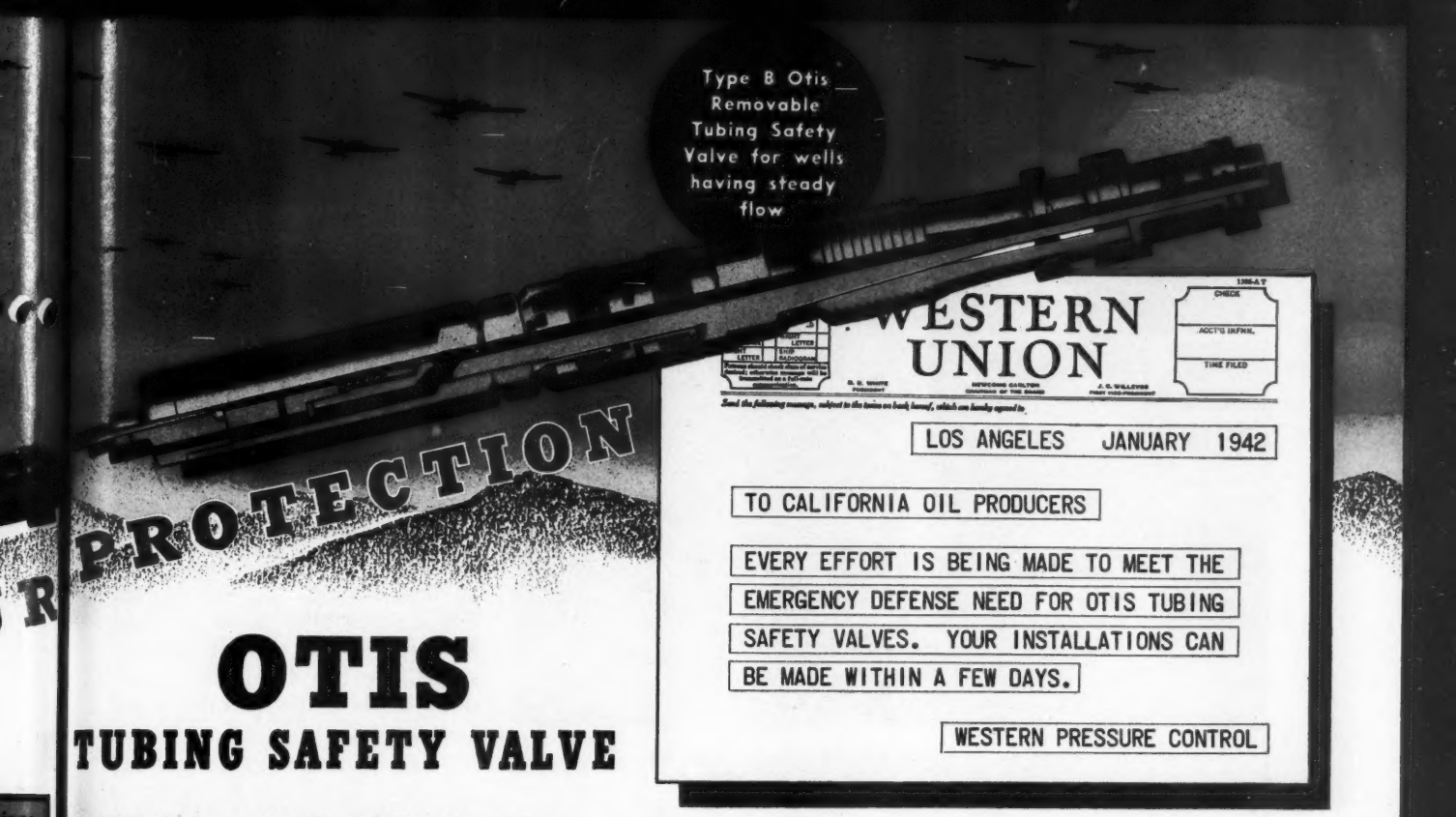
OPENING VALVE—After the valve has closed off the tubing, it can easily be reopened by use of the new Otis Equalizing tool. This tool provides a safe and sure means of equalizing pressures across the valve.

RUNNING AND PULLING—The Type C Safety Valve Assembly can be run and pulled under pressure on an ordinary steel measuring line. Completely equipped and experienced Service Crews are available for installation anywhere.

•Write for complete details or consult your nearest Otis representative today.

WESTERN PRESSURE CONTRO

BAKERSFIELD, CALIFORNIA


Type B Otis Removable Tubing Safety Valve for wells having steady flow
PROTECTION
WESTERN UNION
LOS ANGELES JANUARY 1942
TO CALIFORNIA OIL PRODUCERS
EVERY EFFORT IS BEING MADE TO MEET THE
EMERGENCY DEFENSE NEED FOR OTIS TUBING
SAFETY VALVES. YOUR INSTALLATIONS CAN
BE MADE WITHIN A FEW DAYS.
WESTERN PRESSURE CONTROL

OTIS
TUBING SAFETY VALVE

TYPE B SAFETY VALVE

Oil fields are military objectives—Protect them.

The **Otis Type B** Tubing Safety Valve is a **velocity type** valve that automatically plugs the tubing, giving instant and positive Sub-Surface protection against "wild flow" through the tubing in the event the surface connections fail or are damaged.

DESCRIPTION AND OPERATION

The type B Valve Assembly consists simply of a main valve, valve cage, and valve cage cap. The main valve sits in an open position at the bottom of the valve cage during normal producing rates. Flow enters the valve cage through a series of vertical ports in the valve cage cap, passes up through the annular space between the main valve and the valve cage and through the bore of the locking mandrel. The regulating washer projects out into this annular space. The diameter of the washer controls the effective valve area subjected to flow impact; and, consequently, determines the rate of flow which moves the valve to its closed position at the base of the locking mandrel The instant the rate of flow is great enough to provide sufficient impact against the regulating washer and valve, the valve is moved to its closed position and all flow through the tubing is cut off.

REGULATION—With well pressure a known factor, the valve may be regulated to permit flow up to a desired limit simply by varying the diameter of the regulating washer. The instant this predetermined rate of flow is exceeded the valve automatically closes.

OPENING VALVE—After the Safety Valve has closed, it can easily be opened with an Otis Equalizing Tool. (This tool provides a means to open the small secondary valve in the main valve to permit pressure equalization across the safety valve. As soon as this condition is reached, the main valve drops back to its open position.)

RUNNING AND PULLING—The Otis Type B Safety Valve can be run and pulled on an ordinary steel measuring line. Experienced Service Crews are available for installation of Safety Valves at a nominal daily charge.

TYPE B SAFETY VALVE Data and Dimensions

Size	2"	2½"
O.D. of Valve Cage Assembly	1¾	2⅛
Length of Valve Cage Assembly only, 6" Length	9⅜	9⅜
8" Length	11⅜	11⅜
Weight—Valve Cage Assembly only, 6" Length	3½ lb.	5 lb.
8" Length	4 lb.	6 lb.
Length—Complete with B Mandrel Assembly without Equalizing Sub—6" Valve Cage Assembly	24¼	25⅛
8" Valve Cage Assembly	26¼	27⅛
Weight—Safety Valve Complete but Without Equalizing Sub 6" Valve Cage Assembly	11 lb.	17 lb.
8" Valve Cage Assembly	11½ lb.	18 lb.
If Equalizing Sub is used length is increased	5⅛	5
Weight is increased	4 lb.	4½ lb.

Prices of Complete Assembly or any part given on application. Complete stocks of parts carried in Dallas, Houston, and Los Angeles

● **Consult your nearest Otis Representative for complete details and recommended type.**

WESTERN PRESSURE CONTROL

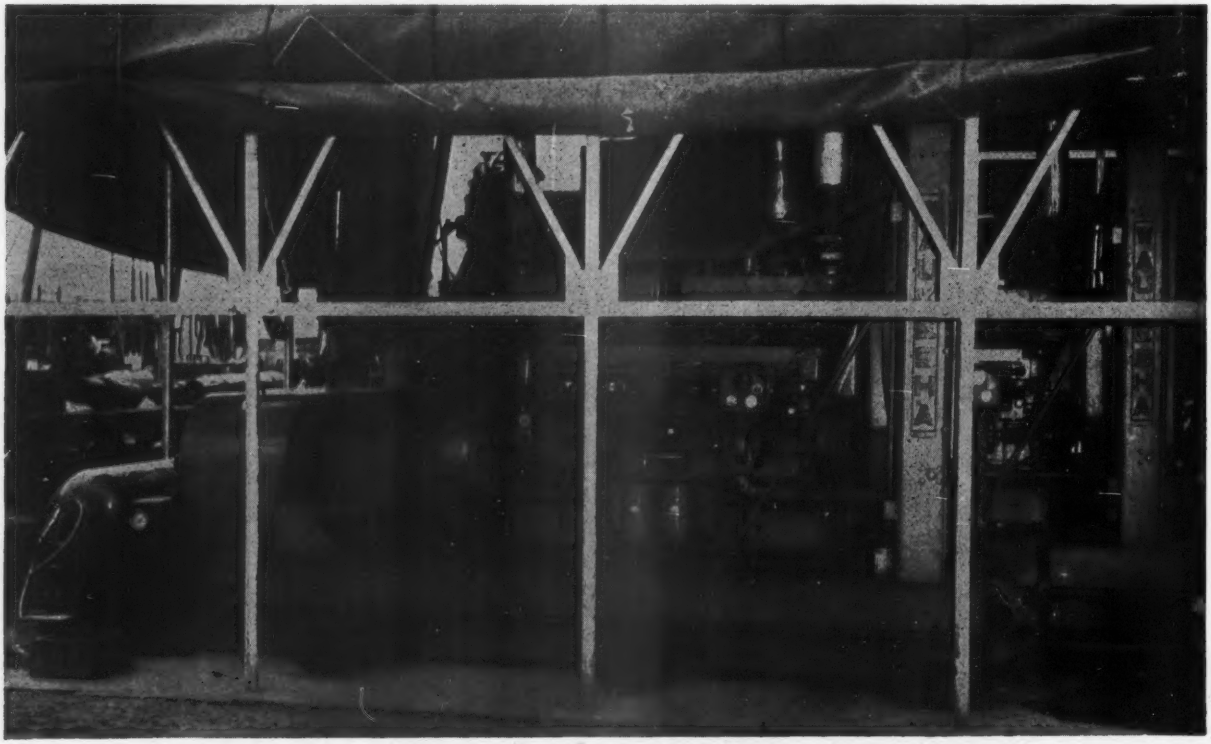
5700 Santa Fe Avenue
LOS ANGELES, CALIFORNIA

At the electrically powered rig of Pacific Western-Getty at Arvin were, left to right: Driller E. F. Robinson, Shell Long, M. L. Collier, C. W. Carter, and E. P. Grantham.

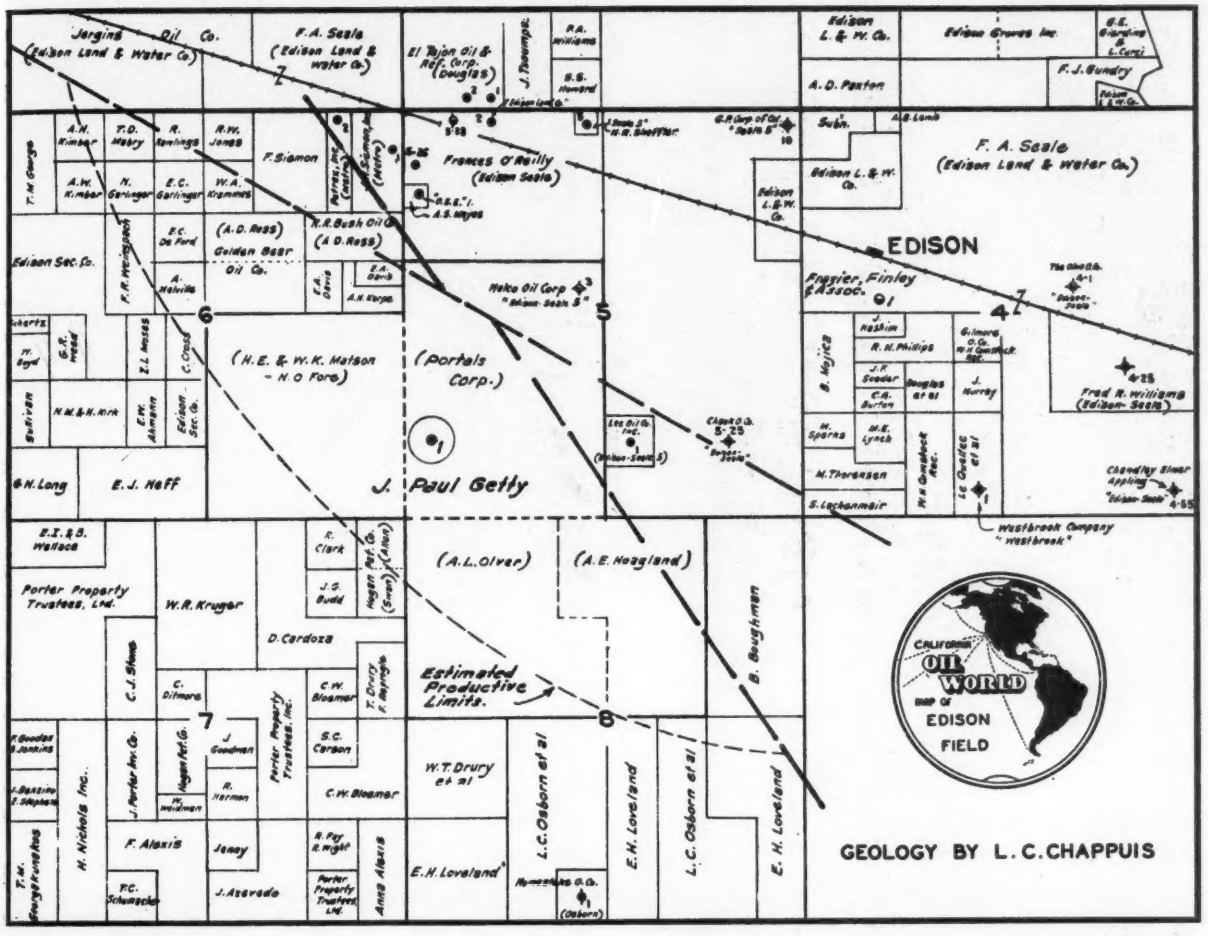
paratively high in the Miocene, it was decided to continue and almost immediately showings began to appear on the ditch. At 6435 ft. oil sand began to appear in the cores and a formation test 6485-6569 ft., while open 30 minutes, recovered 12 bbls. of oil and one barrel of water. A better horizon was topped at 6910 ft. but which graded from oil sand to gray sand from 6960 ft. to bottom at 7178 ft. A series of tests determined the best productive interval to be above 6940 ft. and the well was completed at that depth July 7th flowing 30 bbls. per hour of 32 gravity clean oil through a 48/64-in. bean. The gas flow approximated 225,000 cu. ft. daily. Later the well was rated at 965 bbls. a day on a potential test.

Western Gulf's third well, Geo. R. Wickham No. 1, was drilled south of the deep discovery and was completed with casing perforated from 7340 to 7390 ft. and from 7272 to 7288 ft. Completed on December 3rd, initial production was at the rate of 740 bbls. a day through a 24/64-in. orifice. Allowing for the 400-ft. difference in elevation, the two deep wells appear to be in about the same structural position.

South of its shallow Ram No. 1 and about half a mile southwest of the deep zone producers, Hathaway Co. drilled Ram No. 2 to 8091 ft. but found only gray sand in the lower horizon. The hole is now plugged to 2600 ft. where an attempt is being made to produce the



The sparkplug rig got a strong impetus in 1941.



shallow sand.

At the close of the year, Western Gulf Oil Co. was drilling Lechler No. 3 near the 5000 ft. level and was preparing to drill L. W. Gilmour-U. S. No. 1.

The structure is a faulted anticline and the discovery well was located from studies of the surface geology.

Puente Hills-Turnbull Canyon

The second new discovery in Los Angeles county was Puente Hills-Turnbull Canyon, where Continental Oil Co. completed Turnbull Community No. 1 in sec. 13, 2s-11w at a depth of 3447 ft. Located near a large fault in an area of complex geology, this test was viewed with pessimism by a large portion of the oil fraternity who recalled that practically every well drilled in the Whittier-Puente region had found oil showings which for one reason or another were nonproductive. The dire predictions were substantiated by a formation test between 2000 and 3000 ft. which recovered only muddy water, and it was not until a trial from 3270 to 3340 ft. recovered a considerable quantity of oil and water that enthusiasm began to appear. With the formation looking better all the time, the hole was continued to 3447 ft. where a test recovered 1780 ft. of clean oil and only a negligible quantity of water.

Casing was cemented at 3270 ft. and a liner with 70 ft. perforated was landed on bottom and cemented through perforations at 3373 ft. Completed on the pump October 18th the well produced at varying rates and cuts for the first few days finally settling to 100 bbls. a day of 25.2° gravity oil cutting 1.5%. Subsequent acid treating increased the oil output to 235 bbls. but also raised water production to 100 bbls. and lowered the dry gravity to 23° API. In some quarters this is attributed to failure of the "c.p." job. At year's end, Continental Oil Co. was drilling Turnbull Community No. 2 and Axis Petroleum Co. was under way with Tandberg No. 1 three-quarters of a mile to the northwest.

Credit for the field goes to members of Continental's geological staff who mapped the area.

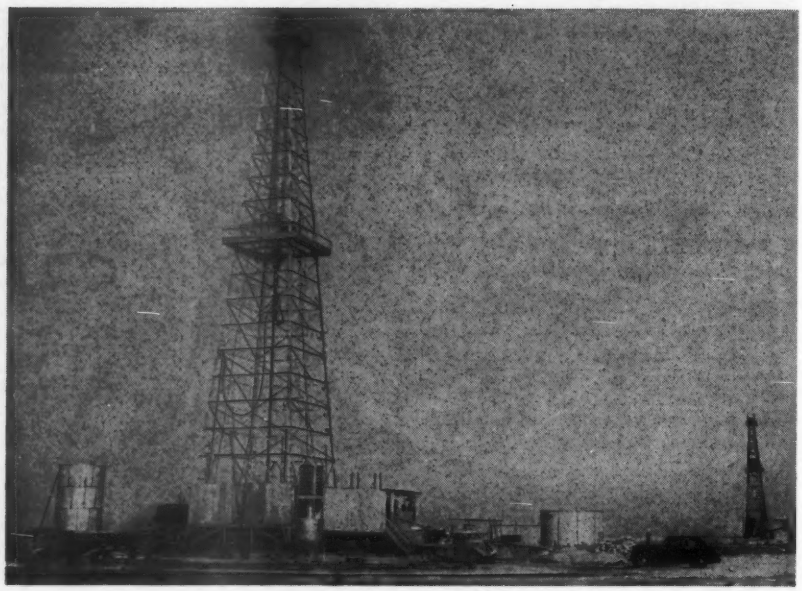
Inglewood Deep Zone

The most important deep zone discovery of the year was the bringing in of large production from Miocene sands below the Nodular Shale at the north end of the Inglewood-Baldwin Hills field by Federal Oil Co.'s R. C. Smith No. 1. Started in mid-year, 1940, the well encountered mechanical difficulties and was idle for several months during which time R. R. Bush Oil Co. and Standard Oil Co. completed noncommercial wells in the Sen-

tous zone on the west flank of the field. Believing the northerly section held better possibilities, the Bush company deepened the Smith well for Federal and completed it at 8341 ft. on March 5th, 1941 flowing over 2000 bbls. a day of 32° gravity clean oil and 2,500,000 cu. ft. of gas through a 57/64 in. bean. After ten months this well still flows 250 barrels 34° gravity cutting 2.0% through a 9/64 bean with 1450 lbs. tubing pressure and 2000 lbs. casing pressure.

At the close of the year 16 wells had been completed in the zone and three dry holes had been drilled outside the productive area which is now known to be controlled largely by faulting. Companies which have shared the deep production with Federal Oil Co. include Jefferson Oil Co., Hogan Petroleum Co., A. T. Jergins Oil Co. and Oscar Howard operating jointly, Standard Oil Co., Tide Water Associated Oil Co. and The Texas Co. On December 31st, three wells were drilling and one was preparing to spud in.

Pacific Western-Getty's superintendent at the Arvin well, Hugh Smith.



Shell made it two in a row with, top, Raisin City, and lower, Mount Poso area discovery.

Del Valle Extension

One mile west of production in the Del Valle field, Herley-Kelley Oil Operations completed the Jasper Petroleum Co., Videgain No. 1, on July 5th discovering what has been called a twin to the original pool. Located in sec. 17, 4n-17w on the basis of surface geology, the well found but did not test showings near the base of the Pliocene. Topping the Modelo (Miocene) at 5650 ft., the well was cored ahead to 6055 ft. encountering streaks of good oil sand below 5890 ft. which graded into gray sand below 6000 ft. The well was plugged to 5990 ft. and brought in barefoot flowing 450 bbls. of 31.5° gravity oil cutting 3.0% through a 20/64 orifice. Gas yield was estimated at 1,500,000 cu. ft. Probably due to leakage around the plug, the water content has since materially increased.

Offset wells were immediately started by Standard, Ohio and Bankline oil companies, the latter

carrying its Videgain No. 101 to 7700 ft. as a deep test. Bankline, however, found little encouragement below the Jasper sand and plugged its well to that horizon where it was completed as a 250 bbl. flowing well. Standard Oil Co. and Ohio Oil Co. completed their first wells by taking in sand streaks above the Jasper Zone, the former company obtaining 530 bbls. of 43 gravity oil with 7,300,000 cu. ft. of gas and the latter getting 1512 bbls. testing 32 gravity with 832,000 cu. ft. of gas.

Making a guinea pig of Sepulveda No. 2, Standard Oil Co. has made a drill stem test of practically every foot of formation below 4860 ft. and has proved the existence of several highly prolific wet gas zones in the Pliocene which had been passed up in the earlier wells.

At the end of the year, the westerly extension had four producers, three wells preparing to complete and no dry holes. The structure appears to be a westerly continuation of Del Valle Anticline with closure possibly effected by faulting or changes in sedimentation.

Fresno County—Raisin City

The year 1941 was especially good to Fresno county which previously could boast of only one field, Coalinga, and part of another, Kettleman Hills. Fresno's first break since the discovery of Coalinga Eocene production came when Shell Oil Co. spudded Properties, Inc. No. 8-18 in the southwest corner of sec. 18-15s-18e on the 4th of April. The hole was drilled on a seismograph high to 6429 ft. bottoming in Eocene and was plugged and tested by stages finding nothing of importance until a formation test 5005-5045 ft. resulted in a gas blow estimated at 10,000,000 cu. ft. Casing was set and the well was brought in June 2nd flowing 25 bbls. of 36° gravity oil and 14,500,000 cu. ft. of gas through a 40/64-in. bean. While drilling, the well had tested a sand at 4700 ft. which showed possibilities of producing a little 22° gravity oil.

Shell's second well, Santa Ana & Fresno Land Co. No. 1-19, cemented casing below the gas sand which was cored from 5005 to 5017 ft. and completed at 5049 ft. flowing at a maximum rate of 736 bbls. of 24° gravity oil and 100,000 cu. ft. of gas. Shell now has five producers and locations staked for two more wells.

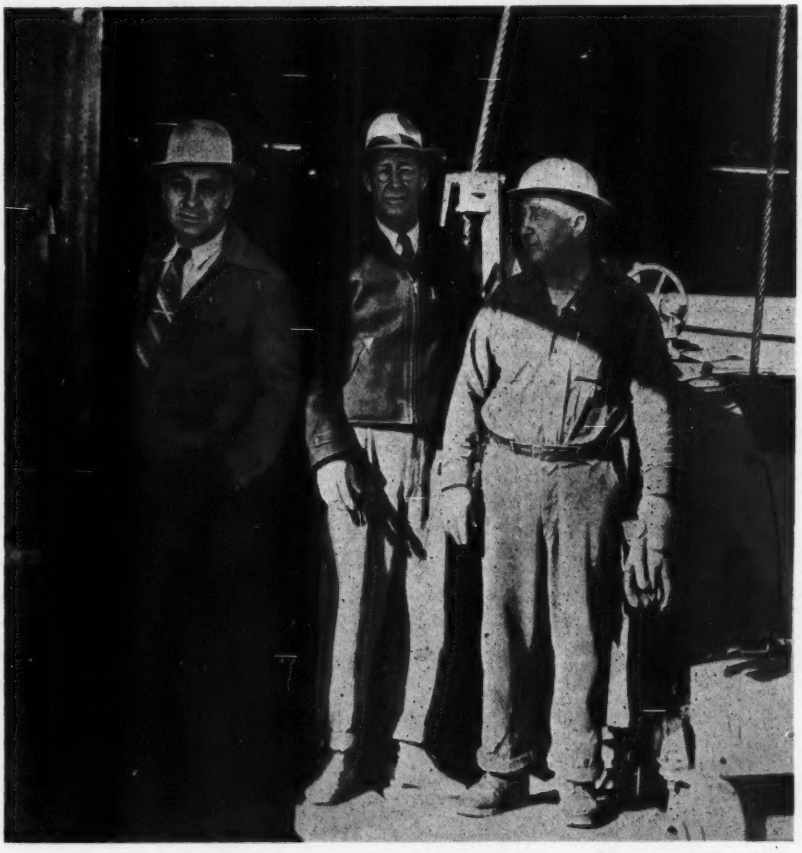
In sec. 13, 15s-17e, the combined operators, Seaboard Oil Corp., Tide Water Associated Oil Co. and Union Oil Co., started a drilling program which, to the end of the year, resulted in the completion of three wells. This group, generally, is slightly higher structurally than the Shell's and the first, No. 88-13, opened another sand below 5100 ft. when it was completed at 472 bbls. of 25 gravity oil and 168,000 cu. ft. of gas.

Bandini Petroleum Co.'s attempt to extend production a mile to the west ended in failure and as the curtain fell on the old year, Barnsdall Oil Co. was experiencing difficulty in completing Ripperdan No. 1, an outpost in the northeast quarter of sec. 24, 15s-17e.

Production in the Raisin City field is from a continental section of the Miocene below the Big Blue.

Helm Discovery

In sec. 34, 16s-17e, nine miles south of the Raisin City field, Amerada Petroleum Corp. spudded its Clover No. 31-34 early in August, as a result of geophysical work. Without pause, this hole was carried to 10,257 ft. penetrating 2000 ft. into the Cretaceous. An electric log was made of the well and wall samples were taken of the most likely looking intervals. Casing was then cemented at 8053 ft. and gun perforated opposite Eocene sands from 7990 to 8005 ft. A test resulted in a 72-bbl. flow of 60° gravity oil and 2,700,000 cu. ft. of gas. With the hole bridged and tested in the Miocene from 7448



Looking over the J. Paul Getty well at Edison were, left to right: E. A. Bender, L. White, engineer, and R. E. Fife, driller.

to 7465 ft. and from 7303 to 7313 ft. flow rates of 432 bbls. of oil with 9,576,000 cu. ft. of gas and 285 bbls. with 3,845,000 cu. ft. were obtained. Gravity from both zones was 65° API. Finally completed on October 31st, the well flowed from the upper perforations 662 bbls. of 64.7 gravity clean oil and 13,618,000 cu. ft. of gas. An 82/64-in. bean maintained a flow pressure of 1000 lbs.

Half a mile to the northwest, Amerada is drilling Weyant No. 5-27 while the same distance to the southwest, General Petroleum Corp. is under way with Esperoad No. 75-33.

The upper horizon in the discovery well is believed to be Temblor, the second is approximately 100 ft. above the Kreyenhagen Shale and the deepest is 60 ft. below the top of the Eocene.

Jacalitos Hills

The third Fresno county discovery for 1941 was the finding of small production by Wilshire Annex Oil Co. in the Kreyenhagen Hills seven miles west of the north tip of Kettleman Hills. Known as No. 33-26E, sec. 26,21s-15e, the well was drilled to 6031 ft. in search of Eocene production similar to the Coalinga Nose fields after extensive geological field work. When no Eocene was found, the hole passing from basal Kreyenhagen into Cretaceous at 6025 ft., drilling was stopped at 6031 ft. and a plug placed at 3905 ft. to test a sand cored in the top 25 ft. of the Temblor. With 5½-in. casing cemented at 3850 ft., the well was brought in October 12th pumping 75 bbls. a day of clean 39° gravity oil, production increasing in a few days to 100 bbls. of 41° gravity.

A second well, No. 21-26E in the same section, was drilled encountering the Temblor sand at approximately the same sub-sea depth as the first and at the end of the year a perforated liner had been landed on bottom at 3713 ft. and a production test was being made. Though only about 20 feet of sand was found in each well, the permeability was considerably better in the second. The oil is believed to have accumulated in a stratigraphic type trap.

Riverdale Discovery

Fourth well to discover new production and the third success for geophysics in Fresno county was Amerada Petroleum Corp.'s Lawton No. 45-26, drilled in sec. 26, 17s-19e at Riverdale. Carried to 8311 ft., the well topped the McLure Shale at 5345 ft., the Big Blue at 5615 ft., the Kreyenhagen at 7610 ft. and the Eocene at 7900 ft. Following the same procedure as in Clover No. 31-34, Amerada made all the hole, ran an electric log and took wall samples before making any tests. Casing was then cemented at 8116 ft. and gun perforated in several intervals up to 6850 ft. without favorable results. With all perforations squeezed off, 20 holes were shot from 6665 to 6685 ft. and the well swabbed in December 13th flowing 331 bbls. of 34° gravity oil and 1,632,000 cu. ft. of gas through a 30/64-in. bean. When the year closed the discovery well was flowing 148 bbls. of 35° gravity oil cutting 3.0% through a 9/64-in. orifice under 1050 lbs. flow pressure. One location to the northeast, the company is drilling Jensen No. 54-26.

Kern County Discoveries

Generally speaking Kern county discoveries, though six in number, are a little disappointing as none can approach the greatness of the fields found in the period from 1936 through 1939.

Union Avenue

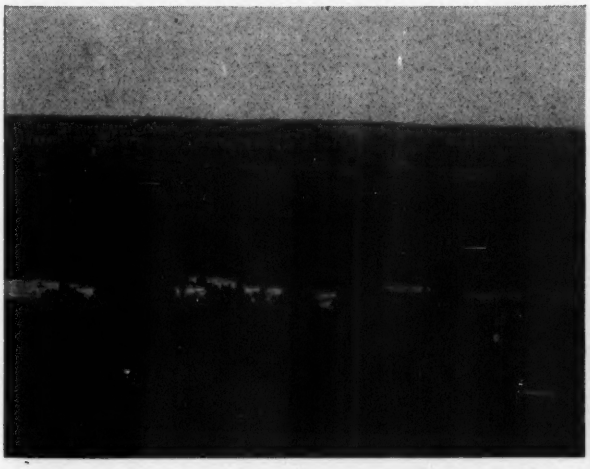
Opening the year auspiciously, Hancock Oil Co. discovered the long sought Union Avenue field by completing Roberts No. 1 at the southerly outskirts of Bakersfield in sec. 6, 30s-28e. Spudded in November of 1940, the well drilled to 5593 ft. encountering streaks of oil sand and gray sand below 4085 ft. As few showings were found in the lower section of the hole, a plug was set at 5358 ft. and casing cemented at 5370 ft. With the pipe gun-perforated from 5282 to 5312 ft., the well was completed on the pump January 29th at an estimated 100 bbl. rate of 15 gravity oil cutting 10%. Production doubled in the following few days and the cut cleaned up to 5%. In April, the casing was perforated from 5075 to 5115 ft., which with both intervals open, increased the well's output to 450 bbls. a day without altering the cut or gravity.

In February Hancock spudded Roberts No. 2 approximately 650 ft. east of No. 1 and carried the

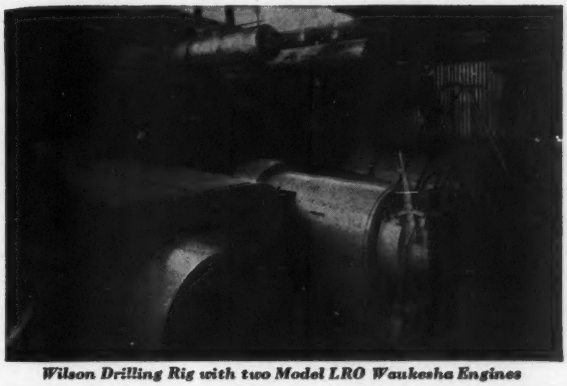
First Shell crew to use 90-foot, 200,000-pound Franks derrick. Left to right: Bichoff, Schlebaum, Harris, Robertson and Wolters.

In the old Kern River oil field there is opportunity for rehabilitation work in the interest of conservation.

In all three major oil producing areas of California, drilling activity rose sharply in 1941.



Midway, Signal Hill, and other closely spaced fields can continue to produce economically for some time to come.



Wilson Drilling Rig with two Model LRO Waukesha Engines

Three Wilson Rigs on Lincoln Lease have WAUKESHA ENGINES

On their Lincoln Lease near Newhall, Calif., R. E. Havenstrite used three Titan Model Wilson Drilling Rigs. Each is powered with two 375-410 hp. Model LRO Waukesha Engines on the drilling rig, and a 136-150 hp. Model GAK Waukesha Engine on the double drum standby hoist. Natural gas of about 1200 BTU was used for fuel and the three engines together consumed an average of 52 m.c.f. daily. Lubricating oil consumption was reported "exceedingly low."

As last reported, the first of these three rigs had been doing 24-hour-day duty almost constantly since May 16, 1940; the second since November, 1940. When the third went into service, in June, 1941, the first rig had finished three wells to about 7,000 ft. All hole drilled from the top down is with rock bits. The formation in this field is exceedingly hard and slows up drilling. On the first well a very aggravating fishing job took about six weeks. But it proved how good the rig is and the complete versatility and dependability of the Waukesha Engines.

There is a Waukesha Engine for every oil field need—10 hp. to 410 hp., gasoline or gas—30 hp. to 325 hp., diesel fuels. *Get Bulletin 1079.*

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Wilson rig's double drum standby hoist (right) has a GAK Waukesha Engine

hole to 5203 ft. Apparently due to faulting, this well correlated 10 ft. higher than No. 1 but found no oil sands and drilling was suspended. After standing idle for months, the hole was redrilled from 2450 to 4292 ft. whip-stocking to the southwest to cross the fault. Considerable oil sand was cored in the new hole and the well completed in the interval 4237-4292 ft. flowing 140 bbls. of 25° gravity oil cutting 8.0% and 700,000 cu. ft. of gas through an 18/64-in. bean. With the orifice reduced to 6/64-in., production was 26 bbls. a day of oil and 530,000 cu. ft. of gas under 1200 lbs. flow pressure.

Roberts No. 4 was then drilled 500 ft. north of the discovery well and completed with the hole open from 4175 to 4241 ft. flowing 600,000 cu. ft. of gas and a few bbls. of high gravity condensate through a 5/64 in. bean.

At the end of the year, Hancock Oil Co. was preparing to test Roberts No. 3 which had bottomed at 5235 ft. and set casing at 5070 ft.

Richfield Oil Corp.'s Union Ave. No. 2 was also preparing to test.

This field, which now appears largely controlled by faulting, was discovered by thoroughly rechecking the past history of Union Avenue exploration.

Dyer Creek Discovery

On the 24th of September, a new field was discovered by Shell Oil Co. in sec. 11,26s-27e approximately three miles northwest of the nearest Mount Poso district production. The successful well, Smith No. 56-X-11, was drilled near Dyer Creek encountering oil sand in the Vedder Zone from 2343 ft. to bottom at 2361 ft. Though the last two feet of formation looked rather gray, the well was placed on production pumping 200 bbls. of 15° gravity oil and 30 bbls. of water. Shell's second well, Smith Cairns No. 2, was drilled 400 ft. northeast of the discovery but found the Vedder wet at 2287 ft., apparently having intersected a controlling fault. Shell at present is preparing to drill Smith Cairns No. 3 to the south and east. Discovered through mapping surface geology, the accumulation is due to faulting.

Shafter Field

Seeking a connecting link between Wasco and Rio Bravo, Continental Oil Co. in January spudded KCL No. C-2 in the northeast quarter of sec. 35,-27s-24e, which after overcoming much mechanical trouble, was drilled to 12,934 ft. finding streaks of sand showing oil below 12,800 ft. A string of 5½ and 4¾ in. casing was cemented at 12,807 ft. and after a long series of tests the well was completed in a very small interval at the casing shoe on the 30th of October. Initial production was gauged at 478 bbls. daily of 37 gravity oil with a 10.0% cut and 475,000 cu. ft. of gas. Settled production averages 275 bbls. a day.

In sec. 36, Continental is drilling a second well, Neuman No. 1, below 9000 ft. while three miles to the southwest, General Petroleum Corp. has passed the 13,000 ft. mark in S. P. No. 51-15.

The productive horizon in No. C-2 is near the Vedder zone in the geologic column and is considered the equivalent of the "A-2" Zone at Wasco. Geophysics is given credit here for discovering another deeply buried anticline.

Mount Poso-Bishop Area

In conjunction with Signal Oil & Gas Co., Bradford Bishop drilled an exploratory hole in sec. 22,27s-28e discovering a new productive fault block east of the main Mount Poso field. Topping the Vedder oil sand at 1419 ft., the hole was carried to 1433 ft. where the well was completed November 25th pumping in excess of 200 bbls. a day of 15.8° gravity oil and considerable sand. Further bailing and the reduction of pumping speed to eight strokes per minute has resulted in a clean steady production of 125 bbls. daily. Preparations are being made to drill another well.

Edison-Portals Discovery

Returning to his former role of individual operator, J. Paul Getty discovered a new fault accumulation in the Edison area with his first wildcat, Portals Corp. No. 1 in sec. 5,30s-29e. With 50 ft. of oil sand cored to 4255 ft., drilling was stopped, casing cemented at 4100 ft. and the well completed December 26th flowing 175 bbls. daily of 20° gravity clean oil through a 16/64 in. bean. According to geologist in charge, Louis C. Chappuis, the well found the top of the Santa Margarita at 3023 ft., the Wicker Zone at 4110 ft. and the top of the oil sand at 4201 ft. The location was chosen by re-interpreting histories of wells drilled in the area.

Blackwell Corner

During the early fall, H. C. Morton drilled a core hole for Etienne Lang in sec. 30,26s-19e which encountered considerable oil sand in the interval 850-1000 ft. just below the eroded Miocene top. After penetrating Eocene sand 100 ft. to 2208 ft., the hole was plugged to 1000 ft. and completed pumping at rates up to 50 bbls. a day. Much sand trouble was experienced but at the end of the year the well was consistently producing between 10 and 15 bbls. a day of 13.5° gravity clean oil. A second well is being drilled under the name Etienne Lang, Occidental No. 2. It is believed the oil has accumulated in Miocene sands of a stratigraphic trap. This discovery was based on a study of surface geology, records of previous test wells and geophysics. Though of minor importance at present, the drilling which is sure to follow may prove the key to open much productive territory in the west Valley area.

United States Navy Bolsters Reserves

To assure continued adequate production on its fee owned acreage in the Elk Hills field, the United States Navy has filed its intention to recondition 17 shallow producing wells. Present indications are that the work will be handled by the office of Naval Petroleum Reserves under the direction of Lieut. Commander V. H. Wilhelm, former chief Petroleum Engineer of The Texas Co.

THIS LAUGH

OFF!!

Gordon Tunnell relates this one:

Mrs. D. took a sudden notion that she wanted a parrot. At the pet store she selected a bright looking bird. Said the clerk:

"This bird is young and a good talker, but during these last two years he has been in a honky-tonk. His language may be a little ribald."

The woman took the bird home, but decided to keep it out on the back porch a couple of months so that he would forget whatever smutty language he had heard. During this time she heard not a single bad word from the parrot.

One evening the woman and her husband invited in some old friends, men and their wives, to play cards. Shortly after the guests seated themselves, the lady slipped out and brought the parrot into the room and placed his cage on a table. The parrot looked around the room, scrutinized the guests, then cocked one eye, blinked a couple of times, and said:

"New house and new girls, but the same old men."

"Please send me some money for a new dress immediately. Have had several dates with Jimmy and have worn each of my dresses once. We have a date tomorrow night and I must have another dress right away. If you don't send the money, send a new dress."

"Get yourself a new boy friend and start over again."

Then there was the young lady who put out to sea because she couldn't decide which one of two sailors she really loved.

John Woodward heard this one:

Somewhere in the Philippine theater of war, four American aviators were playing bridge when the lookout called that half a dozen Jap planes were approaching. The four players looked at each other, and then one of them said, "Okay, I'll go; I'm dummy this round."

A woman gave a cripple a dime and remarked sympathetically:

"It must be terrible to be lame, but there are worse things. Suppose you were blind?"

"You're right, lady," replied the beggar, "I tried being blind and people were always giving me counterfeit money."

Geo. Tyler picked this one up:

Heard in the courtroom:

"Is you de judge ob reprobates?"

"Well, I am the probate judge, if that is what you mean."

"Yas suh, dat's it, Ah 'spects. Well Judge, it's like dis—mah husban' has done died detested, and lef me with seven little infidels, and Ah wants to be 'pointed de executioner."

Alice: "Boo-hoo, grandma, I'm engaged to John, but he just can't bear children."

Grandma: "There, there, dear, we cannot expect too much from husbands."

A Sacramento court official, after explaining the history of the American flag to a group of aliens seeking citizenship papers, asked one of them:

"Tell me, what flies over the city hall?"

The alien blinked a minute and replied: "Peejins."

Names used on this page are entirely fictitious, and any resemblance to persons either living or dead is purely coincidental.

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Field Development

Los Angeles Basin

Anaheim Wildcat Below 9000 Feet

With only a few showings of heavy oil reported near the 8900 ft. level, The Texas Co. is drilling and spot coring below 9200 ft. in Spencer No. 1. The project is located in Orange county between Anaheim and Buena Park.

Deep Aliso Well Is Now Completing

Porter No. 26, Tide Water Associated Oil Co.'s westerly outpost to the Aliso Canyon field, is preparing to complete as the second well in the deep Porter No. 12 zone. A water string is cemented at 7610 ft. and a perforated liner landed on bottom at 7844 ft.

With mechanical difficulties overcome, Universal Consolidated Oil Co. is deepening Ward No. 1 below 7569 ft. in gray siltstone with streaks of sand showing gas and light oil. Apparently not faulted out as is the upper sand, the deep zone sand stringers were first logged at 7529 ft. Drilled originally by Standard Oil Co. three years ago, the well is a northerly offset to the discovery area of the field.

Five Wells Active At Newhall-Castaic

Five wildcats are drilling in the Newhall-Castaic region at the present time, the deepest being The Texas Co.'s Fernando No. 1 northeast of Del Valle in sec. 11,4n-17w. Much gray barren sand has been found in the Miocene in this project and rumor has it that at 7500 ft., present depth, the company is making plans to abandon and move to another location to the west.

Near the Boquet Canyon road in sec. 11,4n-16w, Roy W. Young, Inc. is again drilling Walker No. 1 after several formation tests failed at 7018 ft. because of caving shoulders. Gas on the ditch and occasional light cuts in the fragmentary cores were the basis of the attempted tests.

Resuming work after a six-month shut down, Mangold & Morse Oil Co., Inc. is spot coring below 2150 ft. The well is located in sec. 26,-5n-17w approximately four miles north of Castaic and a mile west of the Ridge Road.

Little of an encouraging nature has been reported from the two active wildcats south of the Santa Clara River. In Towsley Canyon, the joint test of Barnsdall Oil Co., Bandini Petroleum Co. and Ambassador Oil Co. is below 6400 ft. and still in steeply dipping shale. Southeast of Newhall-Potrero, C. G. Willis & Associates, Ferguson No. 1 is drilling in shale at 6100 ft.

Standard Testing Del Valle Project

With casing cemented on bottom at 5838 ft., Standard Oil Co. is gun

LOS ANGELES BASIN WILDCATS

Area	Well	No.	Section	Depth	Status
Castaic	Mangold & Morse Oil Co., McDermott	1	26 5-17	2150	Deepening
	Young, Roy, W., Inc., Walker	1	11, 4-16	7114	Drilling
	The Texas Co., Fernando	1	11, 4-17	7502	Drilling
Newhall	Barnsdall Oil Co., Limbocher	1	17, 3-16	6412	Drilling
	Willis & Assoc., Ferguson	1	30, 6-17	6077	Drilling
Palmdale	Wesco Const. Co., Well	1	20, 5-9	2540	Drilling
Palos Verdes	Surety Holding Co.	1	22, 5-14	1191	Idle
Puente Hills	Axis Pet. Co., Tandberg	1	13, 2-11	2981	Testing
	Continental Oil Co., Turnbull Comm.	2	13, 2-11	3792	Redrilling
Rio Hondo	Potrero Oil Co., Well	1	32, 1-11	5300	Drilling
San Fernando	Fernando Oils, Ltd., Chatsworth	1	18, 2-16		Rig
	Shell Oil Co., Mission	2-1	25, 3-16	4676	Drilling
	Tide Water Assoc., Mission	1	26, 3-16	8787	Drilling.
	Tide Water Assoc., Sesnon	1	28, 3-16	731	Drilling
Whittier-La Habra	Los Nietos Valley Oil Co., Woodard	1	29, 2-11	50	Idle
	Union Oil Co., Sansinena	13	30, 2-10	4143	Swabbing
	Orange County				
Anaheim	The Texas Co., Spencer	1	1, 4-11	9184	Drilling
Bolsa Chica	La Bolsa Ro. and Synd., Well	1	22, 5-11	60	Idle
Costa Mesa	Thompson, Milton N., Banning	1	9, 6-10	5649	Fishing D.P.
Kraemer	Atlas Oil Co., Kraemer	1	36, 3-9	2615	Drilling

perforating and testing by stages in Sepulveda No. 2 in the west extension of Del Valle. Assured of a good producer from several intervals in both Miocene and Pliocene, the company is making final trials before completing.

Bottomed at 5976 ft. and with casing cemented at 5902 ft., the top of the Jasper Sand, Herley-Kelley's Videgain No. 2 is attempting to locate and shut off water which has appeared in production tests.

Ohio Oil Co. Vasquez No. 2, bottomed at 6243 ft., is testing a fourth recement job on casing cemented at 6195 ft.

In the discovery area, R. E. Havenstrite is drilling Liebhart No. 1 below 7100 ft., Lincoln No. 9 at 6580 ft. and Lincoln No. 10 at 6825 ft.

Bell View to Test Rideout Heights Area

Bell View Oil Syndicate is preparing to drill an interesting test for 1000 ft. heavy oil production in the old West Whittier - Rideout Heights field. Derrick foundations have been installed at the northwest corner of Workman Mill Road and Lemon Ave.

2nd Turnbull Well Misses Oil Sand

Continental Oil Co.'s Turnbull Comm. No. 2, located 400 ft. southwesterly from the 200 bbl. discovery well, failed to find the 3400 ft. oil zone and, after coring ahead to 3792 ft., plugged back to 1920 ft. to redrill. With a whipstock set on the plug, the well is now being drilled directionally in an effort to cross the fault believed responsible for the lack of productive formation in the straight hole.

Three-quarters of a mile northwest of the Continental wells, Axis Petroleum Co. is drilling and spot coring Tandberg No. 1 at 3140 ft. in shale. A formation test of thin streaks of oil sand cored from 2880 to 2981 ft., with the tool open one hour, resulted in the recovery of 5½ stands of oily mud.

Western Gulf Rigs Oak Canyon Well

Western Gulf Oil Co. is rigging up to spud L. W. Gilmour-U. S. No. 1 as an easterly extension to deep Oak Canyon production. The location is 850 ft. south and 450 ft. east of the west quarter corner of sec. 32,5n-17w. Western Gulf's Lechler No. 3, only drilling well in the field, is making hole below 6000 ft.

Hathaway Co.'s Ram No. 2, south flank deep test, is reported pumping 15 bbls. a day from the plugged depth of 2745 ft.

Bolsa Chica Area Wildcat is Spudded

La Bolsa Rancho Oil Syndicate Crane No. 1, located in the Bolsa Chica area a mile northwest of the Huntington Beach field, spudded in and is preparing to set conductor pipe at 60 ft.

Engineering, Technology, latest news—twice a month in California Oil World.

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GOTT Water Cans are the practical way to keep drinking water cool for long periods, protected from impurities and always handy to the job. Snug fitting large removable top, strongly built to withstand rough usage. GOTT Water Coolers have extra large covers and a handy non-leaking push button faucet. Your Supply Store has them, get one today! . . . . .
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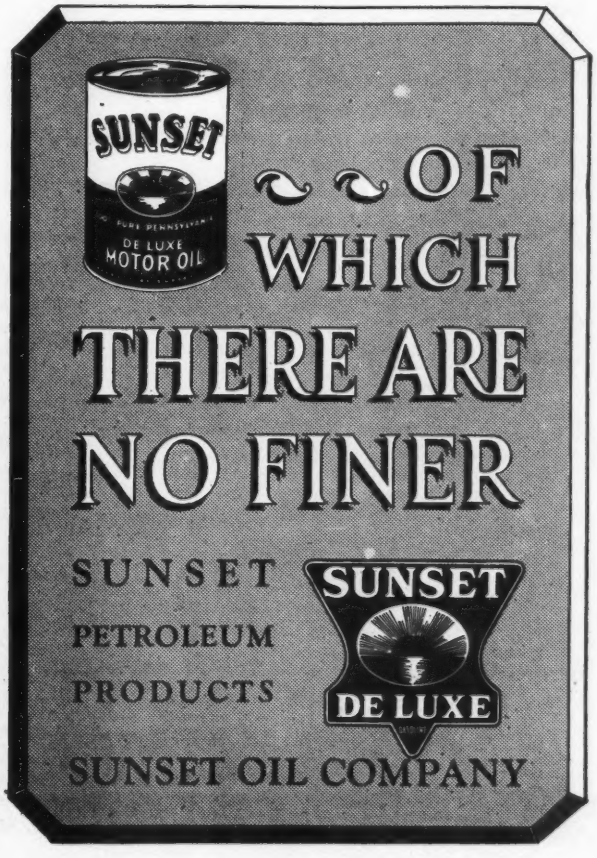


Coastal District

Royalty Service Tests Careaga Wildcat Well

With bottom at 5430 ft., 900 ft. below the top of the Miocene, Royalty Service Corp. is making a formation test in Careaga No. 1 in sec. 8,8n-33w southwest of present Cat Canyon development. The well adjoins old wells of Apache Oil Co. and Douglas-Stratton Oil Co. which found a little oil in the Miocene several years ago.

Failing to find commercial quantities of oil to 6377 ft., Alphonzo E. Bell Corp has temporarily shut down Gilmore No. 1 at the north end of Cat Canyon to drill Twitchell No. 2 at Santa Maria Valley.

Union Oil Co. Bell No. 12 was completed at 5580 ft. and shut in without making a production test. No. 13 is drilling at 4400 ft.

Standard Oil Co.'s Los Flores No. 4 is coring at 5850 ft. after topping Miocene at 4970 ft.

Santa Maria Wildcat Tests Tar Showings

John W. Lee, Trustee, Title Guarantee No. 1, located a mile southeast of Santa Maria Valley production, set casing at 2440 ft. and is making a production test of heavy oil showings found in the Miocene from the shut-off point to bottom at 3503 ft.

O. C. Field Tests Casmalia Project

O. C. Field Gasoline Corp. Righetti No. 2 at Casmalia is continuing a series of tests for production below horizons here-to-fore produced in the old field. The bottom is being plugged by stages from 2195 ft.

Dolley Adams Oil Co. is preparing to set casing near the 1600 ft. level in Morganti No. 2.

Sespe Wildcat Gets Tar Show

John A. Alford's Sespe wildcat, Goodenough No. 1 in sec. 18,4n-19w, is drilling below 2500 ft. in shale showing heavy oil in the fractures.

Shell Abandons Santa Paula Well

Finding no oil sand to 5952 ft., Shell Oil Co. abandoned Santa Paula y Saticoy No. 1 in sec. 21,3n-21w. The project was located near the Santa Clara River south of Santa Paula.

Fred E. Cole Testing Santa Maria Outpost

Fred E. Cole is testing for production in his important Sadie West-Kemp No. 2-1 after setting casing above the Chert Zone at 4376 ft. and bottoming at 5019 ft. The well is located in sec. 31,10n-33w and will extend field limits if successful.

Capital Co. finished Nos. 2 and 3 on the Macdonnel lease in sec. 28,-10n-34w with production of each above the 500 bbl. mark. Gallison Fee No. 5 in sec. 26 will be the company's next operation.

Union Oil Co. completed Moretti No. 3-3, an offset to the O. C. Field, Brown well, flowing in excess of 1000 bbls. a day of 14.5 gravity clean oil. The hole was finished with 7 in. casing landed on bottom at 5447 ft. and cemented through perforations at 5186 ft.

Standard Completes Rio Vista Gas Wells

Standard Oil Co. recently completed Bradford Comm. No. 2 and Perry Anderson No. 3 in the Rio Vista gas field each flowing 16,000,-000 cu. ft.

COASTAL COUNTIES WILDCATS

Area	Well	No.	Section	Depth	Status
Santa Barbara County					
Cat Canyon	Alphonzo E. Bell Corp., Gilmore	1	23, 9-33	6377	Idle
	O. C. Field & Wm. C. McDuffie, et. al. Palmer-Stendel	13–1	13, 9-33		Rig
Careaga	Royalty Service Corp., Careaga	1	8, 8-33	5430	Drilling
Casmalia	Dolly Adams Oil Co., Marganti	2	13, 9-35	1600	Drilling
	O. C. Field Gas. Corp., Righetti	2	13, 9-35	2195	Plugging
Lompoc	Alphonzo E. Bell Corp., Lompoc	6	28, 8-34		Grade
	Fickert Oil Co., Ltd., Well	1	8, 7-33		Rigging up
Santa Maria	John W. Lee, Trustee, T.G.	1	33, 10-33	3503	Swabbing
Ventura County					
Bardsdale	Hopland Oil Co., Well	1	1, 3-19	4634	Idle
	Ventura Southern Oil Co.	G–1	19, 3-19	660	Idle
Conejo	Sycamore Oil Co., Boylan	1	23, 1-20	1700	Idle
Ojai	Coates, Spencer D. Pirie	5	7, 4-22		Rig cable tools
	Kelalee Pet. Co., Harvey	1	8, 4-21		Rig
	Richfield Oil Corp., Ojai	44	13, 4-22	2524	Drilling
Piru	Pacific Western Oil Co., Temescal	11	4, 4-18		Foundation
Santa Paula	Shell Oil Co., Inc., S.P.Y.S.	1	21, 3-21	5952	Abandoned
Sespe	Alford, J. A., Trustee, Goodenough	1	18, 4-19	2500	Drilling
	Ivers, H. A., Kentuck	13½	1, 4-20	990	Drilling
Timber Canyon	Denison, A. T., Denison	1	13, 4-21	600	Drilling
	Crude Oils, Inc., West	1	19, 4-20	927	Cleaning out
	Henderson-Ortez Oil Co., O'Leary	1	29, 4-20		Rig

NORTHERN COUNTIES WILDCATS

County	Well	No.	Section	Depth	Status
Colusa	Pacific National Pet. Corp.	1	17, 17n-4w		Rigging up
Madera	Blake, T. E., Chuck	1	28, 10s-17e		Rig
Monterey	Loma Grande Oil Co., Corey	1	23, 24s-10e	3820	Idle
San Joaquin	Westates Pet. Corp., Spence	1	22, 1s-7e		Location
	Standard Oil Co., West Coast Life	2	4, 1n-5e		Grade
	Standard Oil Co., Blewett Comm.	3	23, 3s-6e		Location
Sutter	Buttes Oilfields, Inc., Buttes	7	3, 15n-1e	4150	No report
	Buttes Oilfields, Inc., Buttes	8	28, 16n-2e	3505	No report
Yuba	Wright, L. G., Cox	1	18, 14n-5e	1805	Redrilling

San Joaquin Valley

Greeley Production Steadily Developed

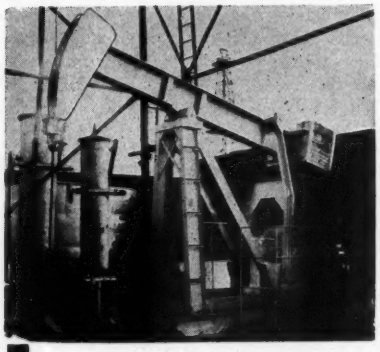
Development in the Greeley field is proceeding steadily to accomplish the necessary drilling up. In sec. 1,29-25 General Petroleum Corp. plugged its 8500 ft. Clarksig No. 2 at 6800 ft. to sidetrack a drill pipe fish and completed Mitchell No. 2 flowing a 1200 bbl. rate from 11,500 ft. In section 12 the company's Oughton No. 6 is drilling at 3414 ft. while Hammer No. 1 was completed from 11,500 ft. flowing an 1100 bbl. rate from the thin zone. Top of the Rio Bravo sand was found at 11,481 ft.

Standard Oil Co.'s KCL No. 12-17 in sec. 7,29-26 is drilling at 9797 ft., KCL No. 11-30 in sec. 17,29-26 at 8068 ft. and KCL No. 11-32 in sec. 18,29-26 at 7628 ft. with grades prepared for Nos. 11-33 and 11-34.

Superior Oil Co.'s R. A. Moore No. 3, in sec. 12,29-25, is near 8900 ft.

Superior Completes Good Rio Bravo Well

Latest completion in the Rio Bravo field is Superior Oil Co.'s Pasadena Realty No. 7 in sec. 33,28-25.



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SAN JOAQUIN VALLEY WILDCATS

Area	Well	No.	Section	Depth	Status
	Fresno County				
Helm	Amerada Pet Co., Weyant	5-27	27, 16-17	7930	Drilling
	General Pet. Corp., Esperoad	75-33	33, 16-17	6684	Drilling
Jacalitos Hills	Wilshire Annex Oil Co.	21-26E	26, 3-15	3713	Completing
	Wilshire Annex Oil Co.	41-26E	26, 3-15		Rigging up
Kerman	Richfield Oil Corp., Ponte	1	30, 13-17		Location
Raisin City	Barnsdall Oil Co., Ripperdan	1	24, 15-17	5161	Testing
	Seaboard-T.W.A.-Union, S.T.U.	66-13	13, 15-17	5978	Shut-in
	Shell Oil Co., Inc., Prop., Inc.	7-18	18, 15-18	5150	Completed
Riverdale	Amerada Pet. Corp., Jensen	54-26	26, 17-19	5057	Drilling
	Kern County				
Arvin	Pacific Western, Geo. F. Getty, Inc., Houchin	1	27, 31-29	7409	Testing
Belridge—South	Ivy Drilling Co., Parkford	1	12, 29-21	1140	Rig pump
	Sentinel Oil Co.	1	10, 28-20	3902	Idle
Buttonwillow	The Texas Co., Bowerbank	4-23	23, 29-24	12144	Redrilling
Devils Den	Lang, Etienne, Occidental	2	30, 26-19	1233	Testing WSO
Edison	Getty, J. Paul, Portals Corp.	1	5, 30-29	4255	Completed
	Frazier, Finley & Assoc., Portals Corp.	1	4, 30-29	2265	Drilling
McClung	Macrate, A. N., Haberfelde	1	32, 29-26	12035	Fishing D.P.
Mt. Poso	Alpha Oil Co., C. V. Elliott	1	1, 27-28	1302	Idle
	Bishop, Bradford, Well	2	22, 27-28		Grade
	R. R. Bush Oil Co., Rodgers-Jones	1	35, 26-27		Prep. to spud
	Vedder, D. G., Glide	23-1	23, 27-28		Location
Paloma	General Pet. Corp., Gallagher	61-33	33, 31-26		Rig
	Ohio Oil Co., KCL A-10	41-4	4, 32-26	7914	Drilling
	Western Gulf Oil Co., L.A.A.C.	36-1	6, 32-27		Foundation
	Western Gulf Oil Co., Symons	12-7	7, 32-27	11700	Testing
Richgrove	Bolling, R. S., Quinn	3	15, 25-27	2926	Fishing D.P.
	Shell Oil Co., Well	45-20	20, 25-26		Location
	Shell Oil Co., Smith Cairns	3	11, 26-27		Location
Round Mt.	F.H.R. Oil Co., Well	1	2, 28-28	1451	Drilling
Shafter	Continental Oil Co., Neumann	1	36, 27-24	9949	Drilling
	General Pet. Corp., S.P.	51-15	15, 28-24	13524	Drilling
Shale Hills	Tideland Oil Co., Grant Est.	1	4, 27-18	1821	Drilling
Union Avenue	Hancock Oil Co., Roberts	4	6, 30-28	5377	Completing
	Richfield Oil Corp., Union Ave.	2	6, 30-28	5340	Perforating
	Kings County				
Dudley Ridge	Dudley Ridge O. C., Ltd., D.R.	3-16	3, 23-19	340	Drilling
Pyramid Hills	Pacific O. & G. Dev. Corp., West Slope	2	20, 24-18		Location
	Pacific O. & G. Dev. Corp., West Slope	41	20, 24-18	2087	Pumping
	Tulare County				
Kingsburg	Goble, W. E., Goble	1	28, 16-23	1860	Idle
Terra Bella	Stout, Geo. W., Stout	2	11, 23-27	745	Idle
Tipton	Richfield Oil Corp., Hewitt	1	1, 21-25	3486	Abandoned
Trico	Trico Oil & Gas Co., Lee	1	17, 24-23		Rig

Located at the southwest flank of the field, the well initialled 1590 bbls. of 39.7 gravity clean oil through a ½ in. orifice from 11,440 ft. Gas flow was measured at 1,700,000 cu. ft. With the bean reduced to 7/64 in., the well makes 99 bbls. of oil and 119,000 cu. ft. of gas. Superior is drilling Geissinger No. 4 at 9403 ft. in sec. 35,28-25 and has a rig up for Osborne No. 3-4 in sec. 28,28-25.

Currently the only other operator in the field, Western Gulf Oil Co.'s northwesterly flank try, Jack No. 58-21, is drilling at 6648 ft. near the south quarter corner of sec. 21,28-25.

Potential Established For Ten Section Well

On a production trial Shell Oil established a 2220 bbl. potential for KCL No. A-64-29 in its privately controlled Ten Section field. Completed with a 5½ in. combination string landed on bottom at 8235 ft. and cemented thru perforations at 8041 ft., the flow consisted of 34.5 gravity oil cutting 1.5% through a 48/64 in. bean. Gas was measured at 3,721,000 cu. ft. with 800 lbs. tubing pressure and 1750 lbs. casing pressure.

Latest completion for the company was KCL No. A-44-30 in sec. 30,30-26, finished flowing 500 bbls. of clean 34 plus gravity oil from 8197 ft. The company at present operates three strings in the field, with several ground jobs constantly prepared in advance of the drill.

Shell Deep Test Encounters Vedder

Shell Oil Co.'s try at Vedder zone production beneath the productive Stevens zone in the Canal field appears discouraging in view of the fact that a fine impermeable horizon, showing little indication of productivity, has been classified as upper Rio Bravo, a section of the objective Vedder. Located in the center of normal Canal production, the well was last reported in hard silt-like formation at 12,837 ft. The few oil showings were encountered at 12,650 ft. after finding the top of the Olcese at 11,440 ft. Top of the saturated Stevens zone, was located at 8050 ft. and will be utilized to complete the well unless more satisfactory deep sands are encountered.

Wilshire Annex Tests Second Jacalitos Well

With 6⅝ in. casing cemented at the top of the Temblor, 3672 ft., and the hole bottomed at 3713 ft., Wilshire Annex Oil Co. has completed preliminary bailing and swabbing operations and is putting No. 21-26E on the pump. Located to the north and west of the Jacalitos discovery well in sec. 26,21s-15e, the second well is reported to have found the sand more permeable.

Williams Plans McKittrick Try

S. R. Williams has brought in material to drill a well near the center of sec. 6,30-22, a little more than a quarter of a mile northwest of the production effected by Otis Hoyt on the old Union Fee lease.

Dresser Acquires Bovaird and Seyfang

Of prime interest to the oil and gas industry is the announcement by Dresser Manufacturing Co. of the acquisition of Bovaird and Seyfang Manufacturing Co. of Bradford, Penn., as a wholly-owned subsidiary.

The chief motive in acquiring Bovaird and Seyfang was to obtain extra manufacturing capacity for Clark Bros. of Olean, a Dresser subsidiary, whose potential business during the period of war boom is far in excess of its manufacturing capacity. Bovaird and Seyfang has manufacturing facilities of 147,000 square feet of plant and buildings, equipped with heavy machine tools, a boiler shop, and grey iron foundry, all of which are useful adjuncts that should enable Clark Bros. Co. not only to speed delivery of engines to the Maritime Commission but also to accept any additional business that may be available in its own field—the oil and gas industry. Thus Bovaird and Seyfang will help in the Clark Bros. production of engines and compressors for refinery expansion of aviation gasoline production for oil conservation projects, in chemical defense plants, and other regular Clark Bros. markets.

Bovaird and Seyfang was founded in 1874 as a forge shop manufacturing oil and gas field equipment. The company was incorporated in 1891. From the early 1900's until 1920, its chief activities were devoted to the manufacture of steam engines and boilers. Today its main products, sold almost entirely in the Bradford field, are gas engines, Diesel engines, gear and band wheel pumping powers, drilling and fishing tools, tanks and pumping jacks. These products, together with a line of popular gas and oil well supplies, are and will continue to be distributed through their one local store in Bradford.

Subsidiaries of Dresser Manufacturing Co., in addition to Bovaird and Seyfang, now include: The Bryant Heater Co. of Cleveland, makers of gas-fired heating and air-conditioning equipment; Clark Bros. Co., Inc., of Olean, manufacturers of gas-driven engines and power-driven compressors; Pacific Pump Works of Huntington Park, Calif., a leader in centrifugal, turbine and plunger pumps for specialized purposes, and Dresser Manufacturing Co., Ltd., of Toronto, Ontario, Canada. The parent company at Bradford is the world's largest producer of pipe couplings and pipe-line repair devices.

Youngstown Appoints Assistant Sales Manager

The Youngstown Sheet and Tube Co. announces the appointment of James E. Holmes as assistant manager of Tubular Sales with headquarters at Youngstown, Ohio.

Mr. Holmes was formerly associated with the Republic Steel Corp. in Cleveland, Ohio.

Oostermeyer Elected Shell Chemical Head

Election of J. Oostermeyer as president of Shell Chemical Co. was announced today at the offices of the company in San Francisco. He succeeds C. B. de Bruijn, who retired after thirty-three years of service with Shell.

Mr. Oostermeyer has been connected with Shell for a quarter of a century and since 1939 has been vice president of Shell Chemical Co. For the last two years he has been actively concerned with the expansion of Shell Chemical's plant facilities for the manufacture of chemical products from petroleum. The company is now operating three plants on the Pacific Coast—at Dominguez near Los Angeles, at Pittsburg and at Martinez on San Francisco Bay.

Mr. Oostermeyer makes his home in San Rafael and is a member of the University Club of San Francisco.

Engineering, Technology, latest news—twice a month in California Oil World.

Duncan Succeeds Campbell For Waukesha Motor Co.

George A. Duncan, for the past eight years assistant branch manager of the Waukesha Motor Co. at Tulsa, Okla. has been advanced to the position of manager, succeeding Arch F. Campbell, resigned.

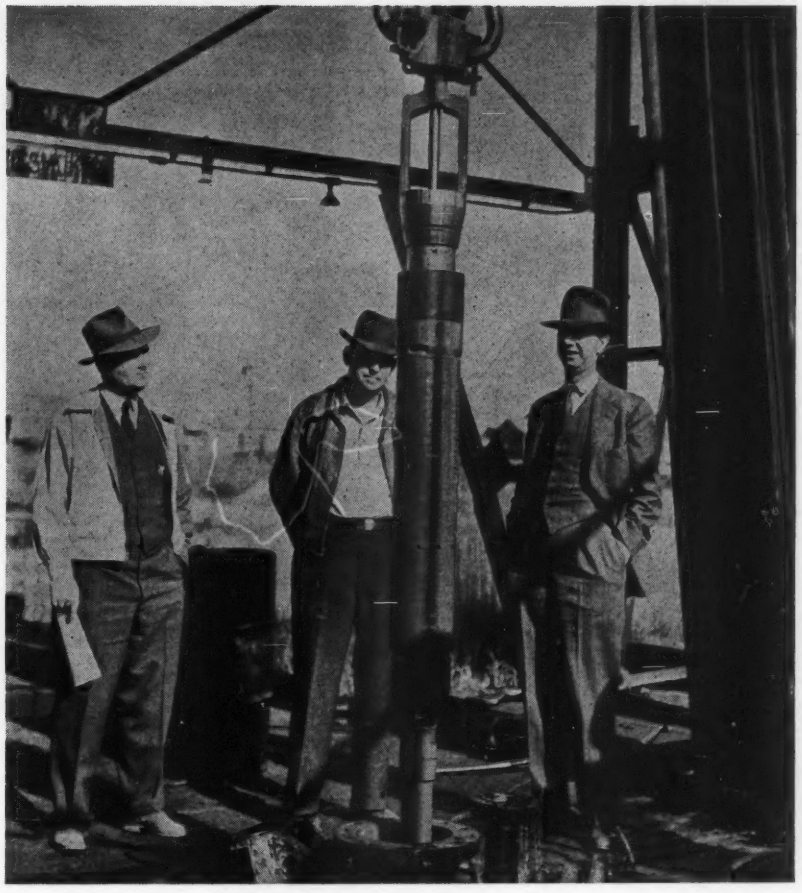
George A. Duncan

Mr. Duncan entered the oil industry more than 15 years ago with the Barnsdall Oil Co. in Tulsa. Later he entered the machinery business with the C. F. Camp Co. of Tulsa, one of the pioneers in this type of business, and as distributors for the Waukesha Motor Co. they were largely instrumental in the development of the internal combustion engine for drilling.

The growing demand for Waukesha Engines in the oil field resulted in the establishment of a direct company branch in 1933 and Mr. Duncan joined Mr. Campbell's staff as assistant branch manager in September of that year. Mr. Duncan's many friends and wide acquaintances in the oil field, and his experience and knowledge of Waukesha products as well as the company's policies insures to Waukesha Engine users a continuance of those technical services, and cooperation which have made him and his company familiar to the entire trade.

Halliburton Employees Get Salary Bonus

The Halliburton Oil Well Cementing Co. reports that its employees have been paid an annual salary bonus amounting to ten percent of one year's earnings. This payment was made to every person in the organization and represents a total disbursement of approximately $400,000.00. The employees of Erle P. Halliburton, Inc. will also receive a similar bonus.



Left to right, Hershel Lewis, Lamtex Equipment Corp.; W. E. Medearis, Getty Oil Co., and Blake M. Caldwell, D-B Division of Emsco Derrick and Equipment Co.

Casing Pump Pronounced Success

Undergoing a test in the Alamitos Heights portion of Seal Beach field is a highly interesting type of oil well pump. This first installation in California of the D-B-Lamtex Casing Pump was made Dec. 18, in W. E. Medearis' Crane No. 5. The pump was set at 2900 feet in 8⅝ inch, 32-pound casing, and on a 54-inch stroke at 22 strokes per minute, it pumped up in two hours.

On Dec. 19, a two hour gauge was taken at 17 strokes per minute on a 54-inch stroke which showed 700 barrels gross, or about 81 per cent efficiency. In order to improve the efficiency, the stroke was stepped to 24 strokes per minute. No further gauge was taken on the gross production, however, spot gauges during Dec. 19 and 20 showed that the net production was in excess of 50 barrels per day as compared with 40 barrels net with the previous tubing hookup.

Fluid in this well is relatively clean with a temperature of about 150° F. at the top of the hole. Gas is present in moderate quantity, but no accurate figures are available as to the exact volume. Through 2½-inch tubing the conventional pump installation handled 900 barrels of fluid for 40 barrels of oil. With the new casing pump, the net recovery of oil was 50 barrels, representing a sharp increase in the gross fluid handled. Under the previous tubing installation the pump was run on a 54-inch stroke at 26 strokes per minute to obtain the 40 barrels net oil.

By eliminating tubing jobs, considerable is saved in installation time. The pump is installed and removed on the rods. Elimination of the tubing naturally reduces production costs, saving the operator the original cost and maintenance expense on the tubing string. Repairs are reported to be inexpensive and easy to make. The lower portion of the pump is subject to the same wear and repairs as any conventional pump used on a tubing string, while the sealing arrangement at the upper end of the pump, or pump head, is so designed that

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MAPS

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the only part subject to any appreciable wear is the Neoprene sealing element.

In introducing the new casing pump, the D-B Division of Emsco Derrick & Equipment Co., and the Lamtex Equipment Corp. pointed out that elimination of the tubing string frees valuable material for defense projects. The two companies say that field tests have proved the adaptability of the casing pump to California well conditions at depths up to 4500 feet.

Engineers of two companies describe the casing pump as follows:

The D-B-Lamtex Casing Pumps consist of three major assemblies: the pump head, the rod assembly, and the pump. The pump head is, in turn, made up of two groups of fittings: the packer assembly which utilizes a non-adhering Neoprene packing element that seals the pump in the casing through the action of a steel expanding head, and a drain arrangement that permits the release of the fluid column when it is necessary to remove the pump from the well. The rod assembly is the connecting link between the pump plunger and the rod string, and serves as a release arrangement for the sealing element when the pump is to be removed. The pump is a conventional D-B Tubing Liner Pump in the desired size, assembled with the proper type of fittings to handle the particular well conditions prevalent at each installation. This pump assembly attaches directly to the lower end of the drain arrangement. The D-B Rod Liner or Cold Drawn Tube Type Pumps may be substituted for the Tubing Liner Pumps if desired. The casing pump is anchored at any desired depth by means of a setting or anchoring device, such as a conventional tubing catcher, or may be set on top of a liner or by extending the mud or gas anchor to the bottom of the hole.

New Bulletin By B and W, Inc.

Under the title, "The Guide to Successful Completions," B and W, Inc., of Houston, Texas, and Long Beach, Calif., have published an 8-page bulletin, consisting principally of an article reprint, "Casing Movement While Cementing," by Bruce Barkis and Kenneth Wright. The article stresses the importance of eliminating as many failure factors as possible during the most important stage of well completion—that period between the running of the last two casing joints and continuing through until the final displacement of the cement. A detailed description is given of the efficacy of wall cleaning guides in removing mud filter cake from the wall of the hole, thus assuring good formation-cement contact and eliminating many costly cementing failures.

Patterson-Ballagh Family of Bail Bumpers

An extensive series of Safety Swivel Bail Bumpers has been introduced by Patterson-Ballagh Corporation. The line has been completed so that a swivel bumper is now available for every type of swivel on the market. Special castings have been developed to fit each make of swivel. Each casting includes a heavy duty rubber bumper which can be replaced in the event of wear. These bumpers are bolted to the different types of swivel and the castings are contoured to fit the various shapes of swivels. Arrangements have been made by Patterson-Ballagh Corporation to distribute the bumpers both direct to swivel manufacturers for installation at the factories or for later installation in the field by operators.